REPORT

ON

AGRICULTURAL INSTRUCTION ACT

1913-1914

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OTTAWA, February 13, 1915.

To the Honourable
MARTIN BURRELL,
Minister of Agriculture,
Ottawa.

SIR,—I beg to present herewith my report on the work carried out by the Provinces of Canada, through the federal grants provided under "The Agricultural Instruction Act," for the year ending March 31, 1914.

As the expenditure of the money so provided extends beyond the c ose of the fiscal year of Canada, it was desirable that this report should not be closed until the larger portion of the grants had been expended.

This report is not for the year ending March 31, 1914; but it covers the expenditure of moneys available or payable to the provinces during the year ending March 31, 1914. Some of the work covered by the agreements is still under way.

I have the honour to be, sir,
Your obedient servant,

C. C. JAMES,
Commissioner.

REPORT ON "THE AGRICULTURAL INSTRUCTION ACT" 1913-14.

Tabled in pursuance of Section 8 of the above-named Act.

SECTION 1.—THE ACT, ITS NATURE AND ITS SCOPE.

THE AGRICULTURAL INSTRUCTION ACT.

On the 6th of June, 1913, assent was given to what is known as the Agricultural Instruction Act, which thereupon came into operation. This Act, as stated by the Minister of Agriculture, was intended to be a prompt and complete fulfilment of a promise made by the Prime Minister that he would provide for "the granting of liberal assistance to the provinces for the purpose of supplementing and extending the work of agricultural education and for the improvement of agriculture."

Pending the adoption of a definite line of policy and in order to enable the provinces to extend their work and enlarge the foundation upon which the future federal policy might be worked out, the Parliament of Canada, on the recommendation of the Minister of Agriculture, in 1912, appropriated the sum of $500,000, payable to the various provinces on the basis of population as determined by the latest census. No special restrictions were placed upon the spending of these moneys, beyond the assent of the Minister to the various lines of expenditure for agriculture as set forth in an agreement approved by Order-in-Council as provided for in the Agricultural Aid Act. The grants to the various provinces were as follows:—

Ontario	$ 175,733 32
Quebec	139,482 40
Saskatchewan	34,296 29
Nova Scotia	34,288 45
Manitoba	31,730 05
British Columbia	27,334 76
Alberta	26,094 95
New Brunswick	24,509 93
Prince Edward Island	6,529 85
	$ 500,000 00

By far the larger portion of this $500,000 was desired by the various provinces for educational purposes, and was so expended. This indicated from the first that the officers of the provinces felt the need of funds for educational or instruction purposes, and that by enlarging and extending this work we "get at the basis of successful production" and at the same time we contribute to the development of better citizenship in the rural community. The Agricultural Instruction Act of 1912-13 was, therefore, a natural sequence to the Agricultural Aid Act of 1911-12.

Let us now give a synopsis of the Act which, according to section 3, was "for the purpose of aiding and advancing the farming industry by instruction in agriculture."

The objects of the Act and the lines of expenditure are indicated in the preamble, which reads as follows:—

"Whereas it is desirable that encouragement be given to agriculture in all the provinces of Canada, and whereas great and permanent benefit will result through education, instruction and demonstration carried on along lines well devised and of a continuous nature:"

It will be seen that in using the three words "education, instruction and demonstration," fairly generous scope is given for the use of the funds. The question may be asked as to what limitation should be placed on the provinces. This is provided for in section 5, dealing with the conditions of payment, wherein provision is made for an Agreement to be approved by the Governor in Council. In this it is stated that the Minister of Agriculture must first approve of the "terms, conditions and purposes" before the grants are paid over to the provinces.

The method in brief is this: The provinces, as represented by the Departments of Agriculture and Education, are free to draw up plans for the expenditure of the grants. They know, or should know, the needs and requirements; they are familiar with the lines best suited to their people. Their plans are submitted to the Minister of Agriculture and, when he is satisfied as to their sufficiency and efficiency, a formal agreement is drawn up and submitted to the Governor in Council. On ratification by the latter, the funds become available. Under section 6 of the Act, the Minister is empowered to appoint officers to confer with the provinces, advise with them, inspect the work, and to see that the moneys are expended in accordance with the intention of the Act. It will be seen that the Act is intended not to interfere with the initiative or freedom of the provinces but, at the same time, to give the Dominion Minister the power of supervision, as he is responsible to the Parliament of Canada.

The general purposes of the Act were thus set forth by the Minister of Agriculture, when on January 17, 1913, he introduced the Bill in the House of Commons:—

> "It is proposed by the Bill to strengthen all lines of instructional and educational work. The scientific researches of the past half century have revolutionized agriculture, but the full benefits of those researches have not reached the great multitude who to-day till the fields in Canada. Too often the spectacle is witnessed, pathetic and pitiful, of ceaseless, honest, laborious toil, bringing distress of mind and body, and, even after long years, bringing no reward, solely and simply from lack of knowledge and misdirected energy. It has been finely said that:—
>
> 'Where mind co-operates with muscle we get a new kind of man, as compared with the empirical drudge who digs and digs from childhood to death without an idea to redeem his labour, and without a hope to realize the solvency of his life. The soil is a great educator. Let men know the reason governing their efforts upon it, and every morning breaks brighter; a new motive power enlightens life and the community moves to a higher destiny.'
>
> "Help given in an educational direction will mean not only better farming, but better farmers, and better and happier men and women. The particular form such assistance may take may vary with the special needs and conditions in each province. It will embrace the increasing of the efficiency and equipment of our agricultural colleges; the establishment of agricultural schools; of dairy and horticultural schools; of short courses in agriculture; the initiation of agricultural teaching in the public schools; and work by travelling or located qualified instructors. It might well include the valuable educational work carried on by means

of demonstration trains, training of teachers in nature study and the invaluable work of domestic science concerned with the women and girls of our communities, whose influence will always constitute one of the most potent forces in solving the problems we are considering."

In determining that, in giving special federal aid to the provinces for agricultural improvement, "education, instruction and demonstration" should be lines to be encouraged, the following points were considered:—

(*a*) Education of the right form is the surest and safest investment to qualify a man to help himself and to become a more efficient citizen.

(*b*) The most progressive agricultural countries were rapidly extending their educational work, and proofs were numerous that progress and education were most intimately related to each other.

(*c*) The provinces had expended the greater portion of the 1912 grants for educational purposes, and indicated in a most emphatic manner that they needed and would welcome further increased appropriations.

(*d*) The rights of the provinces as set out in the British North America Act would be observed.

Section 95 of *The British North America Act* reads as follows:—

"In each province the legislature may make laws in relation to agriculture in the province, and to immigration into the province; and it is hereby declared that the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces, and to immigration into all or any of the provinces; and any law of the legislature of a province relative to agriculture or to immigration shall have effect in and for the province as long and as far only as it is not repugnant to any Act of the Parliament of Canada."

Section 93 deals with education:—

"In and for each province the legislature may exclusively make laws in relation to education, subject and according to the following provisions, etc."

On this authority the carrying out of educational plans belongs exclusively to the provinces, while the Dominion work along other lines is paramount. It seemed, therefore, in making provision for special help for the provinces, that it was advisable to give that help along those lines that were by statute exclusively reserved for the provinces.

The Act appropriated ten million dollars to be available during the ten years ending 31st March, 1923. Of this, $700,000 was available for the year 1913-14; $800,000 for 1914-15; $900,000 for 1915-16; $1,000,000 for 1916-17; $1,100,000 for 1917-18, and for each of the subsequent five years.

Now we come to the division of these annual appropriations, which is as follows:—

(1) $20,000 for veterinary colleges, irrespective of provincial lines.

(2) $20,000 for every province regardless of population, thus accounting for $180,000.

(3) The remainder of the yearly appropriation to be divided among the nine provinces on the basis of population.

The allotments other than the veterinary college grants work out as follows:–

—	1913-14.	Yearly Increase.	1914-15.	1917-23.
	$ cts.	$ cts.	$ cts.	$ cts.
Ontario	195,733 32	35,135 41	230,868 83	336,274 96
Quebec	159,482 40	27,926 76	187,409 16	271,189 44
Saskatchewan	54,296 29	6,856 02	61,152 31	82,720 37
Nova Scotia	54,288 45	6,856 00	61,144 45	81,712 45
Manitoba	51,730 05	6,345 40	58,075 45	77,111 65
British Columbia	47,334 76	5,464 72	52,799 38	69,193 64
Alberta	46,094 93	5,215 46	51,310 41	66,956 79
New Brunswick	44,509 93	4,897 27	49,407 27	64,099 01
Prince Edward Island	26,529 85	1,302 96	27,832 81	31,741 69
Veterinary colleges	20,000 00	....	20,000 00	20,000 00
	700,000 00	....	800,000 00	1,100,000 00

VETERINARY COLLEGES.

It is very desirable that the veterinary colleges be kept in a high state of efficiency, owing to the great value of the live stock interests of Canada. The following table gives the number of live stock in Canada for the past four years. The figures for 1911 are from the Census, those for the subsequent years are estimates based on the Census and returns received from correspondents. (See *Census and Statistics Monthly*, December, 1913, and July, 1914.)

Live Stock.	1911.	1912.	1913.	1914.
	No.	No.	No.	No.
Canada—				
Horses	2,595,912	2,692,357	2,866,008	2,947,738
Milch cows	2,594,179	2,604,488	2,740,434	2,673,286
Other cattle	3,939,257	3,827,373	3,915,687	3,363,531
Sheep	2,175,302	2,082,381	2,128,531	2,058,045
Swine	3,610,428	3,477,310	3,448,326	3,434,261

The total values of live stock in all Canada for the year 1913 were as follows, as given in the *Cenus and Statistics Monthly*, January, 1914:—

Horses	$ 420,079,250
Milch cows	115,369,294
Other cattle	86,522,140
Sheep	10,672,803
Swine	26,664,735
Total	$ 659,308,222

The Department of Agriculture of Canada is charged with two lines of work known generally as "Health of Animals" and "Meat Inspection," under the general control of the Veterinary Director-General. In the carrying out of this federal work, which is increasing from year to year, men with special training are required. It is desirable that these men be trained in Canada. To meet these demands it is necessary that our Canadian veterinary colleges be well

manned and adequately equipped. In the early years of departmental activity, graduates of Canadian colleges were required to take an additional year of training in United States institutions. Most of them received this extra instruction in Chicago. This is now obviated by the enlargement of the Canadian courses from two years to three years, and the providing here of special courses to fit men for the Dominion work. It will be seen that the Canadian Department of Agriculture has a direct interest in Canadian veterinary colleges, and is justified in assuming some responsibility in the training of men for service in connection with such important national interests.

In the year ending March 31, 1912, fourteen veterinary surgeons were appointed to the staff of veterinary inspectors in connection with the Contagious Diseases Division, and thirteen veterinary inspectors were appointed to the Meat Inspection Division. In that year the staff in charge of meat inspection at abattoirs and canning plants consisted of eighty-five veterinary inspectors and twenty-one lay inspectors.

In the year ending March 31, 1913, thirty-six new veterinary inspectors were appointed, twenty-two for contagious diseases and fourteen for meat inspection. No less than ninety-three veterinary specialists were engaged at abattoirs and canning plants.

There are two veterinary colleges in Canada furnishing courses and granting degrees that are recognized, viz.:—The Ontario Veterinary College, Toronto, owned and maintained by the province of Ontario, under the supervision of the Ontario Minister of Agriculture, and affiliated with the University of Toronto; and The School of Comparative Medicine and Veterinary Science, Montreal, a faculty of Laval University, assisted by yearly grants from the Legislature of Quebec.

The former institution gives training for English-speaking students drawn from all parts of Canada; the latter for French-speaking students drawn almost entirely from the province of Quebec.

The following is a statement of the registered students at the Ontario Veterinary College since it was taken over by the Ontario Government:—

—	1908-09.	1909-10.	1910-11.	1911-12.	1912-13.	1913-1914.	1914-1915.
Ontario.....	47	59	80	83	90	96	90
Other provinces.....	50	64	76	68	85	93	77
United States.....	120	142	113	92	87	73	54
Other countries.....	9	13	12	15	12	14	11
	226	288	281	258	274	276	232

From this table it will be seen that the number of Canadian students increased from 97 in 1908, to 167 in 1914, and that it has been doing about as much work for other Canadian provinces as for Ontario. In giving assistance to such an institution as the Ontario Veterinary College, the Dominion Government would be assisting in veterinary training for all Canada. The attendance of students of British origin has steadily increased from 50 per cent, in 1909, to 77 per cent in 1914.

Let us now sum up:—

(*a*) Veterinary surgeons, well equipped and efficient, trained in Canada, are needed in connection with Canadian live stock, the largest and most important industry in Canada.

(*b*) The Dominion Department of Agriculture requires a number of trained veterinarians yearly to carry on inspection work in Health of Animals and Meat Inspection.

(*c*) The two provincial colleges are in reality doing work for all Canada.

For these reasons it was considered advisable and desirable to set aside $20,000 as an annual grant to supplement the provincial grants to enlarge and improve the work in the veterinary colleges of Canada.

AGRICULTURE.

In order that the smaller provinces might have sufficient money to make some substantial showing and do effective work, it was decided, as the Act provides, to give each province $20,000 and then to divide the remainder among all the provinces on the basis of population. The following table gives for the smaller provinces the amounts paid in 1912 under The *Agricultural Aid Act*, when $500,000 was divided simply according to population, the amounts paid in 1913 under *The Agricultural Instruction Act* and the amounts that would have been paid in 1913 if the $700,000 (less the $20,000 for veterinary colleges) had also been wholly divided on the basis of population:—

—	1912.	By Population only in 1913.	Under the Act, 1913.
	$ cts.	$ cts.	$ cts.
Prince Edward Island	6,529 85	8,880 80	26,529 85
New Brunswick	24,509 93	33,333 60	44,509 93
Alberta	26,094 95	35,489 20	46,094 95
British Columbia	27,334 76	37,175 60	47,334 76
Manitoba	31,730 05	43,152 80	51,730 05
Nova Scotia	34,288 45	46,634 40	54,288 45
Saskatchewan	34,296 29	46,641 20	54,296 29

The smaller the province the more it benefited by the provision. The provinces above referred to, of course, were quite satisfied with this method of dividing the grant. At the same time it should be stated that the two larger provinces have made no protest, but, as far as information goes, they are ready to admit that the division is fair to all concerned and that the Act is in the interest of all. Our provinces are becoming more and more dependent in many ways upon one another. The agricultural prosperity of the three Prairie Provinces is reflected in the prosperity of Eastern manufacturing towns, and the prosperity of Eastern manufacturing towns gives an improved home market for local agricultural produce. For instance, the Ontario farmer is favourably affected by the prosperity of the prairie farmer.

The next point to be noted is that none of the appropriations lapse during the life of the Act, and no one province can "steal" from any other. Section 3 reads as follows, in part:—

> "Any portion of any of the above sums which may remain unearned or unpaid at the expiration of any of the said fiscal years previous to the last shall be carried forward and remain available according to its apportionment for the purposes of this Act during any one or more of the succeeding years."

A fixed amount is determined for every province in every year. If the province does not qualify for it in that year, it is available at any future time. And in the spending of the money once paid over by the Dominion Government, the province can take its time; it does not have to observe either the Dominion fiscal year or the provincial financial year, but has to observe the lines laid down in the agreement.

The only other provision that need be referred to is contained in section 7. If for any reason any province should fail to take advantage of this Act or should desire to have the expenditures made and the work carried out by the federal authorities, then, upon resolution of the Lieutenant-Governor in Council of the province, the Minister of Agriculture for Canada may provide for the carrying on of the work. This simply provides that no province shall be overlooked or shall forego any advantages to be derived from the Act. However, there is little likelihood of any province being compelled to take advantage of the provision. In case any province, after receiving funds, should fail in the expenditure along the lines of the agreement, the Minister might be justified in asking for consent to expend future grants.

LINES OF EXPENDITURE.

The lines of expenditure must be submitted to the Minister and be approved by him, and then be embodied in an agreement. It was advisable, therefore, that there should be indicated to the various provinces lines of work that would be approved. Accordingly, there was sent to the Department of Agriculture of every province a list of "suggested lines" for consideration and information. This was sent on June 2, 1913, as at that time it was seen that the Act would soon meet with the approval of Parliament. It will be admitted, I think, that this statement of suggested lines of instruction keeps within the spirit of the Act and at the same time permits a range of work wide enough to meet the views and desires of all our provinces.

Education and instruction of the agricultural people resolves itself into four lines of work.

1. *Public Schools.*—Here the boys and girls of the farm should have developed a love of nature—the nature of the fields, the woods, the orchards, the garden, and, by direct contact with soil and plants and animals, should learn the first principles of the sciences concerned in agriculture.

2. *Agricultural Schools and Colleges.*—These are required in order to continue the work begun in the schools and to train those who, through acquiring more knowledge, will become teachers, investigators, and leaders of farmers.

3. *Extension Work.*—This implies the bringing home to the working farmers the best methods, the latest results of scientific research, to make poor farmers good, and good farmers better; that there may be an increase in products for the consumers, and that the farmers may receive greater returns for their labour.

4. *Women's Life.*—The United States Committee on Agriculture speaks thus:

> "The drudgery and toil of the farm wife have not been appreciated by those upon whom the duty of legislation devolves, nor has proper weight been given to her influence upon rural life. Our efforts heretofore have been given in aid of the farm man, his horses, cattle, and hogs, but his wife and girls have been neglected almost to a point of criminality."

Contrasting the liberality in making grants for live stock protection with the neglect to provide for the education of boys and girls and the social improvement of the women of the country, one broadminded United States senator made

the following caustic comment: "To get money here, one must be a hog!" As will appear elsewhere in this report, this condition is rapidly changing.

Many persons will emphasize the importance of some one of these lines over the others. A complete and permanent system of agricultural instruction will provide for all and neglect none. We have tried in directing the operation of this Act to keep all in mind. Some will give more immediate results than others, and there may be the danger of favouring these. Some are more difficult than others and, therefore, there may be delay in putting them into operation. If, as a people, we are wise we shall consider all and give each its proper place and full attention.

The following is the statement of suggested lines of expenditure forwarded to all the provincial departments:—

1. Equipment and maintenance of—
   Agricultural colleges.
   Agricultural schools.
   Dairy schools.
   Horticultural schools.
   Veterinary colleges.

2. Assistance in the establishing and maintenance of agricultural branches in connection with schools established and maintained by private benefaction.

3. Short Courses in all lines of agricultural work.

4. The appointment of provincial officers or agents whose duties shall be to direct or instruct or inspect along any line of agricultural instruction.

5. Assisting in the teaching of agriculture in public schools as follows:

(*a*) Appointment of director or supervisor of agricultural teaching;

(*b*) Courses of training for teachers;

(*c*) Services and expenses of such teachers;

(*d*) Printing and distribution of bulletins and pamphlets encouraging and assisting in such work;

(*e*) Inspection of work;

(*f*) Any expenditures directly tending to encourage the maintenance of school gardens, teaching of nature study, or instruction in agriculture.

6. Services and expenses of—

(*a*) Teachers of agriculture in colleges or high schools;

(*b*) Located county or district representatives, demonstrators, or instructors, whose work consists in giving assistance along all lines of agricultural work;

(*c*) Travelling instructors in agriculture.

7. (*a*) Organization of Women's Institutes or other associations or circles for the women of the rural parts or for women engaged in any agricultural pursuits (horticulture, dairying, poultry, bee-keeping, etc.);

(*b*) The giving of instruction to women in domestic science or any line of work connected with rural life or any agricultural pursuit;

(*c*) Training of teachers or instructors for the above work.

8. Expenditure in connection with any line of demonstration tending to encourage and assist the rural population to better living and more profitable methods of work,

Demonstration farms,

Demonstration trains,

Demonstrations on farms, or farm demonstrations,

Demonstrations in drainage,
" soil cultivation,
" crop production,
" dairying,
" horticulture,
" poultry-keeping,
" live stock,
" bee-keeping,
" farm management,
and any other branches of agricultural work.

NOTE.—In connection with any demonstration where a competition is practicable and desirable, a sum not to exceed ten per cent of the total amount allotted for said demonstration may be expended as prizes or awards, provided the moneys are used for acquiring further instruction or are expended for the benefit of the successful competitors along the line of demonstration.

9. Miscellaneous: Contingencies of any kind connected with or required for the successful carrying on of any of the above-mentioned lines of expenditure.

Before reporting on the work carried on by the various provinces under the Act, it may be well to give some notes amplifying or illustrating the lines of expenditure just mentioned.

COLLEGES AND SCHOOLS.

Prince Edward Island.—Prior to the passing of this Act the only provision for any instruction in agriculture was at Prince of Wales College, Charlottetown. Mr. Theodore Ross filled the dual position of Secretary for Agriculture for the Island and also of Professor of Agriculture in the college. Students desiring further instruction went to the Agricultural College at Truro, N.S., the Department of Agriculture making some small appropriation to assist them in their expenses. Through the Act two teachers in agriculture were appointed, Professors Davidson and Reid, and the teaching of agriculture now takes its place with other lines of study in Prince of Wales College.

Nova Scotia.—There is a provincial College of Agriculture at Truro, into which the former horticultural school has been incorporated. It provides a two-year course in live stock, dairying, horticulture, and general agriculture. It is open to all students from the three Maritime Provinces. Prof. Melville Cumming, B.A., B.S.A., is principal of the college. He is also Secretary for Agriculture for the province. As a consequence, the direction of all the agricultural activities of the province are in his hands, and are centered at the college at Truro.

New Brunswick.—A dairy school had for some years been conducted at Sussex. There is now an agricultural school at Woodstock, Carleton county, and plans have been laid for two others, one at Sussex, and one at St. Hilaire. That at Sussex is now under construction.

Quebec.—Full courses in agriculture and all its allied branches are provided at Macdonald College near Ste. Anne-de-Bellevue, founded, equipped, and maintained by funds given for the purpose by Sir William Macdonald, of Montreal. It is now affiliated with and under the direction of the University of McGill. Closely associated with it is the McGill Normal College for teachers. Dr. F. C. Harrison is principal of the Macdonald College.

There are two colleges or schools for French-Canadians, both of which provide courses leading to a degree. These are the Agricultural School of Ste. Anne-de-

le-Pocatière (Kamouraska county), affiliated with Laval University, Quebec; and the Oka Agricultural Institute at La Trappe, affiliated with the University of Laval, Montreal.

A provincial dairy school is located at St. Hyacinthe.

Veterinary instruction is provided by the Montreal School of Comparative Medicine and Veterinary Science, which is one of the colleges of Laval University (Montreal.)

Ontario.—The Ontario Agricultural College is located at Guelph, and the Ontario Veterinary College at Toronto. Both are maintained and directed by the Provincial Government, and both are affiliated with the University of Toronto for the conferring of degrees.

Dairy schools are conducted at Guelph and Kingston.

Dr. G. C. Creelman is president of the Agricultural College, and Dr. E. A. A. Grange is principal of the Veterinary College.

The Agricultural College grants a college diploma to students on the completion of the two-years' course. On the completion of two additional years' work the university confers the degree of bachelor of the science of agriculture, B.S.A.

The Veterinary College grants the degree of veterinary surgeon, V.S., on the completion of the three-years' course. The university on a higher standard, grants the degree of bachelor of veterinary science, B.V. Sc., and on further original work, the degree of doctor of veterinary science, D.V.Sc. The course for the university degree will shortly be extended to four years.

Manitoba.—The Manitoba Agricultural College is situated near Winnipeg. It is maintained by the province, and is managed by a board composed of ten persons, six of whom are appointed by the Government and four of whom are elected by the agricultural societies. The college furnishes a course of five years and confers its own degrees. The college began work as a teaching body in November, 1905, and until 1912 was affiliated with the University of Manitoba. On March 28, 1913, the college conferred degrees in agriculture for the first time. The Lieutenant-Governor is the Honorary Chancellor, and Prof. W. J. Black, B.S.A., is president.

Saskatchewan.—The College of Agriculture for Saskatchewan is located at Saskatoon. It forms one of the faculties of the University of Saskatchewan, located in that city.

"Until the organization of the College of Agriculture of Saskatchewan, all educational work in agriculture had been conducted by the Department of Agriculture, and had constituted a large and important part of its activities. With the organization of the college, however, it was felt that that institution could better conduct the many educational activities that were already in existence, extend and develop them, and add to their number as occasion demanded and opportunity arose." (Agricultural Department Report, 1910.)

The Deputy Minister of Agriculture, Mr. W. J. Rutherford, B.S.A., became dean of the college, and four other provincial officers of the department were appointed to the staff. The result has been that a large amount of work carried on directly by other provincial departments of agriculture is handled by the college at Saskatoon. This will be noted further on in dealing with the expenditure of the federal grant in that province.

Alberta.—The University of Alberta is located at Edmonton. Provision has been made for a College of Agriculture as one of its faculties, which will probably be started in 1915. Meanwhile, it has been considered advisable to provide agricultural schools. Six demonstration farms have been established at Medicine Hat, Claresholm, Olds, Sedgewick, Vermilion, and Stony Plain. In 1912 it was determined to carry on an agricultural school at each of these farms. In that year school buildings were erected at Claresholm, Olds, and

Vermilion for the purpose of teaching agriculture and domestic science. Diplomas are awarded to students on the completion of their course. These pupils, on taking two more years' work at the college at Edmonton, will receive the degree of bachelor of scientific agriculture.

British Columbia.—As yet there is no college or school of agriculture in British Columbia. There are, however, large numbers of students from this province taking courses in colleges in other provinces. Plans are now in operation for the organization of a provincial university, and agriculture is to be one of the important faculties. A dean of agriculture has been appointed, Prof. L. S. Klinck, who is working out plans for a college of agriculture. Dean Klinck, prior to his appointment, had been for some years professor of field husbandry and farm superintendent of the Macdonald College in Quebec.

FEDERAL AID TO COLLEGES.

The Agricultural Instruction Act makes provision for assisting agricultural colleges and schools, and it will be seen in the reports hereafter of the expenditures in the various provinces, that advantage has been taken of this provision. The following is a brief summary of the same:—

Prince Edward Island.—Courses of agriculture have been established at Prince of Wales College.

Nova Scotia.—Extensive additions have been made to the college buildings for teaching purposes, and to the equipment; salaries of some members have been paid in part, and two additional instructors provided for.

New Brunswick.—An agricultural school has been equipped, and provision made for the erection of another, now under construction. All the expenses of teaching are met out of this federal grant.

Quebec.—Enlarged buildings and increased equipment have been provided for the Oka Agricultural Institute and the Agricultural School at Ste. Anne-de-la-Pocatière. Funds have been provided for additional instructors as follows: four at Oka; three at Ste. Anne-de-la-Pocatière, and eight at Macdonald College. The equipment of the new Veterinary College at Montreal has all been met through this Act.

Ontario.—New buildings have been erected at the Ontario Agricultural College costing over $96,000 to date, and five additional instructors added to the staff.

Saskatchewan.—Eleven instructors for extension work have been added to the staff of the College of Agriculture at Saskatoon, and more will be engaged as they become available.

Alberta.—Part of the equipment of the three agricultural schools has been provided, and all the salaries and the maintenance of the schools have been met out of the Agricultural Instruction Act.

Sketches of the agricultural colleges and schools of Canada were specially prepared for *The Agricultural Gazette.* These give the history of the institution, its organization, and survey of its work. Illustrations add to the value. The dates refer to the issue:—

February,	The Nova Scotia College of Agriculture.
March,	The Manitoba Agricultural College.
April,	The Saskatchewan College of Agriculture.
June,	Agricultural School of New Brunswick.
June,	The Alberta School of Agriculture.
July,	Macdonald College, Quebec.
September,	The Ontario Agricultural College.
October,	The Agricultural School of Ste. Anne-de-la-Pocatière.
November,	The Oka Agricultural Institute.

AGRICULTURE IN PRIVATE SCHOOLS.

There may be schools maintained by private benefaction that should be encouraged to provide agricultural instruction for their pupils. Only one province has taken advantage of this provision. Quebec, out of the federal grant, gave $100 to the Orphelinat, Notre Dame des Champs, Paspebiac, Bonaventure county; and $700 to the Orphelinat Agricole, at Vauvert, Lac St. Jean.

It might here be appropriate to set out what has been done in the United States in providing federal funds for state work. There also it has been recognized as desirable that Congress should make provision for assisting the various states in agricultural education, though the methods differ somewhat from those provided for in the Canadian Act.

As far back as 1862 the Federal Government of the United States set aside large areas of public lands for the purpose of providing funds for the states to establish colleges for teaching agriculture and mechanic arts. Through amending Acts the amount became $50,000 for every state. These were followed by other Acts which provided $30,000 for every state for experiment stations attached to these colleges. During 1914 further provision was made for extension work through these colleges, and, while this report is in preparation, there is before Congress a Bill that provides liberal grants to the states for teaching agriculture in state schools. These are set out in greater detail in the appendix to this report. The Agricultural Instruction Act covers all the provisions set out in these several Acts of Congress. When the Page Bill was before Congress in 1911–12 very decided opinions in regard to its working were expressed by some of the states, protesting against "bureaucratic regulations" and recommending that the "autonomy of the states should be preserved." Similar opinions were expressed by the various provinces of Canada when in 1910 the question of federal aid for technical education was proposed. While assisting the agricultural colleges and schools with federal grants, no attempt at coercion or dictation has been made, and hearty co-operation has resulted between the Dominion Department of Agriculture and the various provincial institutions.

SHORT COURSES.

All the young people of the farms cannot go to agricultural schools or colleges. There are many who have advanced in years who desire and would be profited by instruction from agricultural teachers and experienced farmers. The teaching of the schools can be taken to them or special courses can be arranged for at the colleges. These courses vary in length from one day to three of four weeks. As a rule they are specialized courses, taking up such lines as pure seeds, live stock, dairying, horticulture, poultry. The aim is to make the teaching as practical as possible, and the assistance of experienced successful farmers in various lines is found to be of very great value.

Every province made provision out of the federal grant for short courses as follows:—

Prince Edward Island	$ [illegible]
Nova Scotia	[illegible]
New Brunswick	1,[illegible]
Quebec	2,000
Ontario	7,500
Manitoba	7,000
Saskatchewan	5,000
Alberta	3,000
British Columbia	5,000
	$ 38,400

In addition to the foregoing, in many cases, the appropriations along various lines of instruction or demonstration involve the holding of meetings which are of the nature of short courses.

AGRICULTURE IN PUBLIC SCHOOLS.

This brings up one of the most difficult problems in connection with the educational system of every advancing country. Everyone admits that the people should be educated to become better men and women, to become loyal citizens, and also be trained for the various lines of work through which they shall earn their living. A well-rounded and complete education should recognize mental, moral, and physical development along with the imparting of information. The combination of these in school training will give us an ideal system. A country whose material progress is based on agriculture, and one-half of whose people live upon the farms, is neglecting its duty and avoiding its responsibility if it does not shape its educational system to give the boys and girls who are to live upon the farms some preliminary training or instruction in the work of the farm or in the great principles involved in farm work and farm life. While it is important and of great value to provide instruction for farmers of mature years, it is much more important that such training as is practicable be given to the boys and girls in the receptive period of their lives. The progressive agricultural countries of Europe have long since recognized the necessity of this. In this newer land, where nature's resources have been abundant and readily available, we have not as yet set ourselves to the solution of the question in the thorough and extensive manner that it deserves. In the framing of this Act, and the consideration of its application, we have tried to give special emphasis to this work, and we are pleased to see that the question is being taken up with fresh inspiration. It should be recognized that we cannot import any scheme from any other country and impose or engraft it upon Canada without change or modification. It does not follow that because Denmark or Belgium or Sweden has succeeded in teaching boys and girls in agriculture along certain lines that all we have to do is adopt their systems. These systems differ somewhat in these countries. Canada as a country differs from these countries, and Canadians are a people quite different in racial characteristics from Danes, Belgians, and Swedes. We shall have to work out a system applicable to Canada; in fact we shall have to work out systems applicable to the different provinces. We should study carefully the methods adopted in other countries and thereby get help and suggestions, adopting such methods as are applicable here, and being careful to avoid those that would not appeal to our people or be useful in our conditions.

Several of the provinces have appointed men to take charge of this work, to be the leaders and directors in the working out of plans, which will in the end be the result of years of experimenting and experience.

The following provinces have appointed special officers for the purpose:—

Nova Scotia	L. A. De Wolfe, B.A., Truro.
New Brunswick	R. P. Steeves, B.A., Sussex.
Quebec (school gardens)	Abbe Martin, Ste. Anne-de-la-Pocatière.
Ontario	Prof. S. B. McCready, B.A., Toronto.
Manitoba	H. W. Watson, B.A., Winnipeg.
British Columbia	J. W. Gibson, B.A., Victoria.

In Prince Edward Island the work is under the charge of Mr. R. H. Campbell, Superintendent of Education; in Saskatchewan it is supervised by Mr. A. H. Ball, Deputy Minister of Education; and in Alberta the work is directed by

Dr. J. H. Miller, Director of Technical Education. In Quebec, the Minister of Agriculture has recently appointed Rev. Abbe Martin to supervise and direct school gardens, and probably before this report is in print Saskatchewan will have appointed a director of agricultural instruction.

A start has been made, and a good start, when a province has appointed some qualified person to supervise and direct this work—to study conditions, to arrange courses for training teachers, and to give encouragement and direction in the carrying out of the work.

The training of teachers is imperative. As a rule, in Canada the rural school is in charge of a young lady from 16 to 25 years of age. She may or may not have been brought up on a farm. Her knowledge of farm life and farm work may be very limited. She may be intending to teach only for a limited time, for a few years, until town or city work opens up or until she attains that for which so many look forward—until she gets married. Her previous schooling has not given any prominence or preference for agriculture. How is she to be trained so that she can profitably and acceptably teach the simplest principles of agricultural work? In the older countries of Europe the rural teacher is quite frequently a man, married, living at the school, settled down in his life-work—a man who has the ability, the experience, the special training and the outdoor facilities for giving real agricultural instruction. Herein lies a real problem.

The Ontario Department of Education, in 1914, published a "Report Relative to the Training of Teachers and other Matters" by Mr. J. J. Tilley, Ex-inspector of Model Schools, which contains an interesting plea for consolidating schools, and discusses their relationship to the teaching of agriculture and domestic science.

The Agricultural Gazette of June, 1914, has an article on "Consolidation of Schools in Manitoba" by Mr. Chas. K. Newcombe; and in the July issue there is a series of articles on consolidated schools in the various provinces.

We have thought it wise that some of this federal money should be used for the training of the teachers to fit them for this important work. Any one familiar with rural school conditions in Canada, and with the personnel of the teachers, will at once understand why, in providing for the teaching of agriculture in our public schools we include in the same, provision for nature study and the maintenance of school gardens.

As we have said, this problem may have to be worked out differently in the various provinces. Manitoba presents a very helpful and suggestive line for consideration in her consolidating of schools, whereby scholars from a large area are gathered in one common central school, with pupils graded, and a staff of teachers maintained, one of whom is a specialist in agriculture. Thus, at Roblin, seven small schools covering 115 sections of land were consolidated into one graded school with six teachers. In 1913-14 there were 260 pupils, 185 of whom were brought to school in fourteen vans, one of which traversed 9 miles. The average attendance was 77 per cent of the enrolment. There were thirty students between 16 and 21 years of age. The class in the agricultural course numbered eleven. (See report on Consolidated Schools issued by the Department of Education, Winnipeg; also appendix to this report.)

The following federal appropriations were made in 1913-14 for agricultural instruction in public schools, including school gardens:—

	Grants.
Prince Edward Island	$ 5,529 85
Nova Scotia	7,500 00
New Brunswick	6,000 00
Quebec	3,000 00
Ontario	10,000 00

These appropriations, which are expended through the Departments of Education, may not seem large, and may appear to be quite inadequate to meet

the requirements of a comprehensive and universal system, but such was not intended. What was aimed at was to provide funds for the initiation of such a system, with the expectation that once well started it would be recognized as a necessary part of a complete system of public school education and be provided for in the regular way along with the other branches of our educational systems. Special attention should be directed to the very popular and instructive work being done in boys' and girls' clubs, and the holding of rural school fairs. As will be seen by reference to the reports under the various provinces, this work is growing and promises to be a very important element in interesting country boys and girls in improved agriculture. The funds provided by this Act are helping in the work.

Nova Scotia.—Settings of eggs are distributed and competitions are held in the fall for poultry, vegetables, canned goods.

Quebec.—The poultry department of Macdonald College has organized boys' and girls' clubs, and publishes a monthly bulletin to increase the interest and carry information to the members.

Ontario.—In 1914, 148 fairs were held, representing 1,391 schools with 75,602 entries and an attendance of 95,310.

Manitoba.—$2,000 was appropriated, and the reports of the results are most satisfactory.

While not provided for under the Act, reference may be made to the Potato Clubs in Carleton and Russell counties, Ontario, carried on by the generosity of Mr. R. B. Whyte, Ottawa. For three years these have been carried on with great success. A similar competition for girls in horticulture, gardening, and domestic canning has just been initiated and provided for by Mr. Whyte. Provincial and Dominion agricultural officials have assisted. Provincial officers interested in this work should communicate with Mr. L. H. Newman, Secretary of the Canadian Seed Growers' Association, Ottawa. A report on the work carried on in 1913 was printed in *The Agricultural Gazette* for February, 1914. Work of this kind should not be left entirely to Government departments to initiate. Public-spirited citizens will find the financing of such work profitable to the community and enjoyable to themselves.

Provincial departments might well consider the advantage of issuing a monthly for the boys and girls somewhat on the lines of the Macdonald College Bulletin, but restricting the information somewhat and dealing with all subjects from the standpoint of boys and girls.

A very interesting article on the work to be done in public schools and through boys' and girls' clubs will be found in the Tenth Annual Report of the Canadian Seed Growers' Association for 1914. It is by Prof. S. B. McCready, and is based on his experience in Ontario. The title is "What can the Rural Schools do to promote an active interest in the production of pure seed in Canada?" The paper is really wider in range than the subject indicates. His conclusion in dealing with the practical work of rural school clubs is this:—

> "The hope for better rural schools, the hope for better rural education for country people lies in getting into the school work something like this, which will grip the attention of the people and make them believe that education is worth while."

AGRICULTURAL INSTRUCTORS.

This covers the providing of instructors in agriculture in colleges or schools, and instructors among the people, who may be assigned a limited area of work such as a county, or be given a district, or cover an entire province.

Let us take a province having a population of 2,500,000, one-half of which is rural. It has one agricultural college. If 2,500 could be taken to the college

for instruction it would mean only one-fifth of one per cent; or put it this way: there are, say, 175,000 farm families having 350,000 boys and girls of the age of possible college students. Less than one per cent go to the college. It would take several agricultural colleges in every county to give all the farmers' boys and girls the college education. If the boys and girls, the men and the women cannot go to the college for instruction, can the agricultural college instruction be taken to them? This is the problem. It is solved, to some extent, by appointing men to go to the counties, to the townships, to the individual farmers, and give them the instruction and advice as close as possible to their own homes. The nearer home you can bring practical instruction the more acceptable and effective it will be. France did something along this line many years ago when she appointed an agriculturist for every district, who had the direction of work and the giving of instruction to teachers and also advising the farmers of that district. Belgium also adopted this method. Mr. B. Seebohm Browntree in his work on "Land and Labour, Lessons from Belgium" (Macmillan & Co., 1911) gives a short chapter on the agricultural education system in Belgium. Full agricultural courses were given at the State College or agricultural institute at Gembloux and at the University of Louvain. In addition, there was the fine veterinary college at Brussels. Five private agricultural and fifteen secondary schools were subsidized for promoting courses in agriculture and domestic economy. In addition, instruction was given in every primary school, with evening classes, for those living at home during the day. Travelling schools remaining three months at one place also were provided. "However valuable this instruction may be to young people, by far the most important part of the agricultural teaching given in Belgium is directly organized by the State experts (*agronomes de l'Etat*) of whom there are twenty-seven, with eight assistants. Three or four are attached to the office of the Minister of Agriculture in Brussels; the rest are distributed over the country, each having a district allotted to him, in which he does all he can to promote farming interests, while supplying the Minister of Agriculture with any local information which he may require."

As Belgian agriculture had attained a position unexcelled, if equalled in Europe, it may be appropriate to make fuller reference to it here, especially as in Belgium, extension work by provincial or district representatives has been more thoroughly tried out than in any other country in Europe. It may be timely and of interest to students of present history to know something about one of the finest agricultural systems in the world so ruthlessly destroyed, and therefore I have set forth some information in the appendix to this report.

The following statement in regard to the establishing of farm bureaus and the appointing of county agricultural agents has just come from the State Agricultural College of Connecticut. It may be of interest to know that Mr. C. D. Jarvis is a Canadian, a graduate of the Ontario Agricultural College:—

> "The advent of the agricultural agent marks a great advance in the interests of agriculture. While he has been at work in the Southern States for several years, he has not been a conspicuous figure in the North until within the past two years. In view of his accepted usefulness, it is safe to say that he has come to stay. It is not like Connecticut to be behind in the march of progress, and it is hoped that before next season's farm work commences there will be a capable agricultural agent in each of several counties of the state. New London County has taken the lead in this progressive movement, and has had an agent in the field throughout the past season. Hartford, New Haven, and Litchfield counties are planning to start the work very soon.
>
> "For the success of the work it is essential that a representative county-wide association be formed and a farm bureau established to carry on the work. The Connecticut Agricultural College Extension

> Service and the Federal Department of Agriculture are prepared to furnish financial assistance and to supervise the work. The counties making application for financial assistance shall be supplied in the order that their applications are received.—C. D. JARVIS, Director Extension Service."

In some States the work has been inaugurated by business men, manufacturers and bankers who realize that their business welfare depends upon agricultural prosperity. In Canada, however, this work is all initiated and directed by the Provincial Departments of Agriculture, and that, in my opinion, is the preferable method. The work should be kept in closest touch with the provincial agricultural college. Here is one of the finest opportunities for city men to co-operate with the rural community. Why should not the business men of a county or even the council of a city or town, in a county in which the provincial department has organized this work, provide annually a substantial sum of money to extend the work. With a county office opened and a competent man in charge of the work for a county, anywhere from four to ten men could be profitably employed in instruction work. Suppose a sum of ten thousand dollars a year could be provided to supplement the regular government grants for a county, an agricultural development could be effected that would astonish the people. I do not see how results of a substantial character could be obtained in any other way that would equal those of such an enlarged extension movement. This would provide also for the employment of permanent instruction in domestic science for the rural community. What other investment of cash will produce equal direct cash returns to the whole community?

Further information will be found in this report dealing with district representatives' work in Ontario. The following is a general statement of the spirit of the movement:—

> The general aim of this work is to bring the best agricultural methods close to the farmer, to get his sympathy, to arouse his interest, to stimulate him to better methods. When a man is selected for a county he is told to study his people, their conditions and their needs, and to arrange his work accordingly. He is given a fairly free hand, though, of course, he is in close touch with the department and all its branches. The first result noticed is the increased interest manifested by the farmers. Probably for the first time they realize that the complicated government organization has been created for a specific purpose, and that purpose is to assist the farmer to a better and more prosperous living. Once that feeling is abroad, the application comes easy. And now the whole agricultural organization comes into use. This "man on the spot" brings into his county all those resources of the government departmental organization about which the farmer had some hazy knowledge, but whose usefulness he had questioned, and "professors" and "experts" become real men like himself, whose object is not to pose as men of exclusive distinction and drawers of salaries, but who are able and willing to give real help. With the farmer the age of talk has gone by, the day of demonstration is here.

General statements are interesting, but specific examples of results are more convincing. A statement prepared at our request by Mr. C. F. Bailey, Assistant Deputy Minister of Agriculture, as to some of the work accomplished in Ontario by district representatives will be found in The Agricultural Gazette for May, 1914.

WOMEN'S INSTITUTES AND DOMESTIC SCIENCE.

Any complete and comprehensive scheme of agricultural education must make provision for the farmers' wives and daughters. In Canada the farm home is the centre of agricultural life. The farmer's wife is his partner in work. She is the director of the domestic operations, and assistant, if not supervisor, in connection with the dairying, poultry, and gardening. It is not many years since she was to some extent associated with him in the harvest. She is in immediate touch with all the farm operations. To neglect or overlook her is unfair and unprofitable, and, therefore, we are encouraging the use of some portion of this grant for the extension of women's institutes and the teaching of domestic science. In some provinces this work has been made possible only since the federal grant has become available; in others it has been the means of extending plans already in operation. Following is a statement of the federal appropriations and the directors of this work in the various provinces:—

		Federal Grant.
Prince Edward Island	Mrs. A. E. Dunbrack	$ 3,000
Nova Scotia	Miss Jennie A. Fraser	2,000
New Brunswick	Miss Hazel W. Winter	2,400
Quebec (Macdonald College)	Miss Frederica Campbell	2,000
Ontario	Geo. A. Putnam	6,500
Manitoba	Miss H. M. Gowsell	4,500
Saskatchewan	Miss Abbie DeLury	2,500
Alberta	Miss G. G. Stiven	2,000
British Columbia	Wm. E. Scott	2,500
		$ 27,400

What are the results? Are the Women's Institutes and Homemakers' Clubs doing anything worth while? Following the three large annual conventions of the Ontario Women's Institutes held at London, Ottawa, and Toronto, the editor of *The Canadian Farm*, in the issue of November 27, 1914, writes as follows:—

> "We must take off our hats to the farm women of this country, who have so ably stood by the Women's Institute organization. That organization has become one of the most aggressive and potent factors we have to-day in bringing about improved conditions in the country. Through its agency the women of the farm are being gradually freed from a great deal of the drudgery and monotony of the farm home. The Women's Institute is reaching a side of farm life that for many years was left to shift for itself. One can recall the time when all that many a farmer's wife had to look forward to was attendance at church on Sunday, a day's outing at the fall fair, and visiting neighbours. The institute organization has not, however, substituted something else for her Church, the fall fair, or the family neighbourly call. It has merely taken hold of the farm home problem, and by giving the farm woman a broader outlook on life has strengthened her place in the Church and the social life of the neighbourhood. The farm home has taken on a very different meaning to many women since the institute was organized. The institute has not lessened interest in the home and work on the farm, but has intensified it. There were murmurings when the movement first started from a few pessimists of the male persuasion that the organizing of farm women into clubs would mean neglect of the home and the many duties developing upon the women in the home. In fact, there were incipient rumours that dinner would not be ready just on the minute and that the farmer's daily food supply would dwindle to very small proportions, and

so on. It was even insinuated that the men might be compelled to fish for themselves once in a while on the food line (which, by the way, would not hurt them any). But none of these things happened. The very opposite has been the case. The farmer has found his comforts in the home increased as the women have become more closely identified with the institute movement."

DEMONSTRATIONS.

A small number of farmers' sons will go to the agricultural college, the best farmers will read the agricultural papers, and a few will even buy some of the latest text-books. Agricultural reports and bulletins will affect a portion of the farming community. But to reach the great mass of the rural community, to touch and influence the indifferent farmer, something must be done that brings results right home to him, to the man himself, and, if possible, right on his own farm.

The great hope of improvement in the average farmer lies, not through sending him a report or pamphlet, not through talking at him at an institute meeting, not through doing something for him on an Experimental Farm, but through helping him, directing him and stimulating him to do some work for himself on his own farm wherein he gets improved financial results through his own efforts. Demonstrations from which the farmer cannot eliminate himself are bound to prove successful means of instructions.

Apart from demonstration trains, for which about $10,000 was set apart in New Brunswick, Quebec, and Manitoba, the following appropriations were made for demonstration work on soils, cultivation and drainage, crops, horticulture, live stock:—

Prince Edward Island	$ 1,500 00
Nova Scotia	11,300 00
New Brunswick	4,500 00
Quebec	23,000 00
[illegible]	[illegible]
Manitoba	16,000 00
Saskatchewan	10,700 00
Alberta	8,000 00
British Columbia	20,000 00
Total	$ 93,000 00

FORM OF AGREEMENT UNDER THE AGRICULTURAL INSTRUCTION ACT.

MEMORANDUM OF AGREEMENT made and entered into by and between the Honourable Martin Burrell, Minister of Agriculture for Canada, hereunto authorized by Order of His Excellency the Administrator in Council, bearing date the day of , 1913, party of the first part,

and

The Government of the province of herein represented by Commissioner of Agriculture for said province, hereunto authorized by Order of His Honour the Lieutenant-Governor of said province in Council, bearing date the day of , 1913, party of the second part.

WHEREAS, under the terms of the Agricultural Instruction Act for the purpose of aiding and advancing the farming industry by instruction in agriculture, there shall be paid out of the Consolidated Revenue Fund of Canada to said province during the fiscal year ending the 31st day of March, 1914, the sum of $ and,

WHEREAS, it is provided in said Act that the payment of said moneys shall be conditional upon agreement between the Minister of Agriculture and the Government of said province as to the terms, conditions, and purposes within the meaning of said Act, upon and for which the payment of said moneys is to be made and applied.

NOW THEREFORE, the said parties have mutually agreed that the said moneys shall be paid upon the terms and conditions and shall be applied to the purposes hereinafter set forth, to wit:—

1. One-half of said moneys shall be paid to said party of the second part by said party of the first part on the execution of these presents.

2. The balance of said moneys shall be paid to said party of the second part by said party of the first part from time to time, upon the latter being satisfied that such moneys have been and are being properly expended for the purpose for which said moneys were paid as hereinafter provided.

3. The said party of the first part shall have at all times the right through such officers of his department or other persons as he may designate or appoint for the purpose to inspect any work carried on through the assistance of said moneys, and may withhold any further payment on account of the same if, in his opinion, the conditions of this agreement are not being fulfilled.

4. The said moneys shall be expended for and applied to the following purposes, the amount to be expended for each being set opposite the same, to wit: —

.....$
.....$
.....$

5. Should it hereafter at any time be determined that any of the amounts provided as aforesaid for any of the foregoing purposes can with advantage be varied, then by mutual consent of the parties hereto the same shall be varied accordingly.

6. The party of the second part shall render to the party of the first part such statement of the expenditure of said moneys as may be required from time to time by the said party of the first part.

7. It is understood that the moneys granted by this agreement are intended to supplement the amounts devoted to agriculture by the province itself, and are in no wise to be used for the purpose or curtailing the customary provincial expenditure in aid of agriculture.

IN WITNESS WHEREOF the said party of the first part has hereunto set his hand and the seal of said Department of Agriculture at the city of Ottawa, this day of , 1913.

AND IN WITNESS WHEREOF the said party of the second part has hereunto set his hand and the seal of the said province at the city of in said province, this day of , 1913.

In reporting on the work carried on under this Act there are three conditions set out in the above agreement that are to be observed:—

First.—That the moneys granted are being spent or have been spent in accordance with or for the purposes set out in section 4.

Second.—That the expenditures are in accordance with the objects or purposes of the Act.

Third.—That the province has not used these grants for the purpose of curtailing the customary provincial expenditure in aid of agriculture.

These have been kept strictly in mind in advising with the officials of the various provinces, in examination of and inquiry into their work and in the

preparation of this report. Most of the conferring with officials and advising as to lines of work has been done by personal interview. A liberal interpretation of "instruction" has been allowed, and the ability of provincial officers to judge the requirements of their people has been recognized. While advice and suggestion have been freely granted, there has been no attempt at coercion or unnecessary restraint. At the same time we have firmly maintained that the expenditure must be made in accordance with the Act. Our contention has been that the Act specifically limits the appropriations to "education, demonstration, and instruction" and that the minister, much less his officials, has no power to override the Act or to permit expenditures along lines other than those prescribed.

When the Minister of Agriculture introduced this Act in the House of Commons he made clear the desirability, in fact the necessity, of hearty co-operation between the federal department and the various provincial departments if we were to get results that the expenditure should warrant. This is best set out in the Minister's own words:—

> "We have in mind a general conference each year with representatives from the provinces in order that the work may be co-ordinated, and so avoid duplication between federal and provincial departments. We have in mind, also, development of a publications office by means of which the people of Canada will be kept continually informed as to agricultural work in progress in all parts of the country. In these ways something like a real co-operation between the Dominion and the provinces will be achieved, provincial rights will be safeguarded, and sufficient control will be exercised by this Government over the federal grants. As we earnestly desire to treat this whole matter from an economic and national standpoint, eliminating party politics and party advantage, so also we look to the Governments of the provinces to take the same stand and to work with the same ends in view. It is obvious that the success of the whole scheme is dependent on the spirit in which it is approached and operated."

This Act provides for the inspection of work carried on, and for the reporting upon the same. It will be seen, therefore, that in the carrying out of the purposes of the Act, as set out in the minister's address, three things were to be provided for:—

First.—Inspection of the work by officers of the Dominion department.

Second.—Creation of a publications office.

Third.—A general conference of provincial officials interested in the Act.

A few words as to these will be in place.

INSPECTION.

It has been my duty as commissioner to visit the various provinces from time to time, consult with the officials, give such advice as I might be able, and to give a general direction and supervision to the work, with one exception however, so far, in the case of the province of Quebec, for which Mr. J. C. Chapais, of St. Denis, Kamouraska county, was appointed assistant commissioner. Mr. Chapais has had an extensive acquaintance with agricultural work in the province of Quebec, and as a French Canadian speaking French he could visit the various parts of the province and confer with those engaged in the carrying on of the varied lines if instruction.

I might say that my intercourse with the provincial officials has shown that they have been ready and most desirous to carry out the Act in the spirit indicated in the request of the minister above referred to. Early in 1914 Mr.

W. Dawson, B.S.A., was appointed under the Act, and so far he has devoted his whole time to assisting in the collection and preparation of material connected with agricultural instruction used in *The Agricultural Gazette*. Mr. J. B. Spencer, Editor of the *Gazette*, has during the past year supplemented my work by visiting all the provincial departments, investigating the work, collecting information and examining records.

PUBLICATIONS.

In January, 1914, there was established an official publication known as *The Agricultural Gazette of Canada* which has been issued monthly under the editorship of Mr. J. B. Spencer, who for some years has been Chief of the Publications Branch of the Department. The *Gazette* is not intended in any way to enter the field of farm journalism. It is intended for free circulation among officials, and aims to give special information as to work carried on by Dominion and provincial departments. It was planned to assist in the development of government work in all parts of Canada, and it is hoped that it may be of some value to the agricultural press in giving information in advance of annual reports. It is of especial value in connection with The Agricultural Instruction Act. From month to month appear reports of work carried on in the various provinces with the federal appropriations. The officials of all the provinces have freely and heartily expressed their approval and appreciation of the establishment of this *Gazette*, and have regularly contributed to its pages.

In addition to regular monthly reports on the work of the Dominion branches and the provincial departments, the descriptions of colleges and schools already referred to, the historical sketches of all the Departments of Agriculture in Canada, federal and provincial, reference may be made to the following series of articles dealing with work carried on in all parts of Canada. The dates indicate the issues of the *Gazette* in which these may be found:—

April	Alfalfa.
May	Co-operation,
	Farm Drainage.
June	Protection of Birds.
	The Weed Problem.
	The Swine Industry.
July	The Consolidation of Schools.
	The Sheep Industry.
August	Bee-keeping.
September	Instruction Trains.
	Demonstration in Fruit Packing.
October	The Control of Injurious Insects.
	Provincial Entomological Legislation.
	School Gardens.
November	The Conservation of Soil Moisture.
Dceember	Fall Fairs.
	Travelling Libraries.

THE CONFERENCE.

For the first time in Canada, representatives of all the provincial Departments of Agriculture and Education met in consultation. All of the provincial departments had been visited by officers of the Dominion department, and many of them had from time to time come to Ottawa. It was felt by the minister, however, that as a general educational scheme was being inaugurated it would be advisable to have them all meet together, to make personal acquaintance.

and to become better informed as to the working of the Act. Invitations, therefore, were extended by the minister to the Departments of Agriculture and Education to send representatives to meet in Ottawa in March 24 and 25, 1914.

The following provincial representatives responded to the call:—

Prince Edward Island—
Hon. Murdoch McKinnon, Commissioner of Agriculture.
Robert H. Campbell, Superintendent of Education.

Nova Scotia—
Prof. M. Cumming, Secretary for Agriculture and Principal of N.S. Agricultural College.
L. A. DeWolfe, Director of Rural Education.
Graham Creighton, P.S. Inspector, Dept. of Education.

New Brunswick—
J. B. Daggett, Secretary for Agriculture.
R. P. Steeves, Director of Elementary Agricultural Educátion.

Quebec—
Hon. J. E. Caron, Minister of Agriculture.
G. A. Gigault, Deputy Minister of Agriculture.
Lionel Bergeron, Asst. Secretary Dept. of Public Instruction.
Dr. F. C. Harrison, Principal of Macdonald College.
Rev. Canon Dauth, Vice Rector of Laval University.
Brother Liguori, Sec. Oka Agricultural Institute.
Rev. Abbe O. Martin, Director Agricultural School of Ste. Anne de la Pocatière.
Dr. G. A. Dauth, Montreal Veterinary College.
Dr. F. T. Daubigny, Montreal Veterinary College.

Ontario—
W. B. Roadhouse, Deputy Minister of Agriculture,
C. F. Bailey, Asst. Deputy Minister of Agriculture,
Prof. S. B. McCready, Director of Elementary Agricultural Education.
Dr. Geo. C. Creelman, President of Ontario Agricultural College.

Manitoba—
Hon. George Lawrence, Minister of Agriculture.
S. A. Bedford, Deputy Minister of Agriculture.
Robert Fletcher, Deputy Minister of Education.
Prof. S. C. Lee, Manitoba Agricultural College.

Saskatchewan—
Hon. W. R. Motherwell, Minister of Agriculture.
A. F. Mantle, Deputy Minister of Agriculture.
Dr. Walter Murray, President University of Saskatchewan.
Prof. W. J. Rutherford, Dean of College of Agriculture.
Augustus Ball, Deputy Minister of Education.

Alberta—
Hon. Duncan Marshall, Minister of Agriculture.
Geo. Harcourt, Deputy Minister of Agriculture.
Dr. Jas. C. Miller, Director of Technical Education.

British Columbia—
W. E. Scott, Deputy Minister of Agriculture.
Geo. H. Deane, Asst. Superintendent of Education.

A number of Dominion officials registered and attended the meetings, listening to the discussions. It will be seen that five Ministers and eight deputy ministers of Agriculture were in attendance. Every Department of Education and every Agricultural College was represented.

The following programme was carried out:—

Tuesday, March 24, 1914.

Morning, 10 o'clock—
Address—Hon. Martin Burrell.
The Agricultural Instruction Act.
Dominion and Provincial Work—Co-operation.
The Agricultural Gazette.

Afternoon, 2.30—
Demonstration Work.
District Representatives.

Wednesday, March 25.

Morning, 10 o'clock—
Agricultural Instruction in the Schools.
The Work of the Departments of Education.
Domestic Science.

Afternoon, 2.30—
Agricultural Schools.
Veterinary Courses.
Agricultural Colleges.
Short Courses in Agriculture.

Evening, 6.30—
Informal Dinner at Parliamentary restaurant.

A report of this conference appeared in *The Agricultural Gazette* for April 1914. Much that was referred to will be taken up under the reports of the work in the various provinces. It may not be out of place to reproduce the short address of His Royal Highness the Governor General who honoured the conference by visiting one of its sessions:—

> "I am afraid I cannot take to myself credit for my knowledge of agriculture and botanical matters, but I can say that I do take the very deepest interest and recognize what an important part these take in the welfare of any country and probably in no country more than in Canada. Canada must be an agricultural country primarily. I think most people are agreed on that. You have the natural advantages of great mineral wealth and great water-powers, and these all work for the good of agriculture and can be used profitably for agricultural purposes. I do think that it is a sign of the deep interest recognized throughout the Dominion that you have come here to Ottawa, many of you at great inconvenience, entailing very long journeys; and I must congratulate you on meeting here to support the Minister of Agriculture in his efforts. I feel sure that your united knowledge and experience will count for much.
>
> "I hope the results of this congress may be of the greatest benefit to the Dominion; that you who are assembled here from the different parts of the Dominion, where climate and circumstances are largely different, may benefit by the discussions which you have had with each other; that you will return to your own provinces feeling that there has been an advance made; and that the prospects of agriculture are considerably improved, especially in regard to the great interest taken by the most important of our agriculturists and employers of labour."

At the conclusion of the conference the following resolution was passed:—

> "That this conference desires to place on record its appreciation of the action of the Honourable the Minister of Agriculture for Canada, in having enacted The Agricultural Instruction Act and in calling this the first conference of the representatives of the provinces of Canada engaged in agricultural work of all kinds."

SECTION 2.—PRINCE EDWARD ISLAND.

Out of the $500,000 voted to the provinces in 1912 under the Agricultural Aid Act, Prince Edward Island received as its share, on population basis, the sum of $6,529.85. This was apportioned as follows:—

1. Purchase and repair of an agricultural building at Charlottetown, for classes and agricultural meetings	$	4,000 00
2. Instruction in animal husbandry		264 80
3. Demonstration work in horticulture		144 90
4. Holding short courses of instruction in agriculture		1,951 47
	$	6,529 85

Under the Agricultural Instruction Act each province in 1913 received exactly $20,000 more that in did under the Act of the previous year. The following was the apportionment for 1913-14:—

1. Agricultural education in connection with Prince of Wales College	$	4,000 00
2. Short courses in agriculture		3,306 55
3. Live stock judging classes		1,000 00
4. Demonstration work in horticulture and sheep and poultry husbandry		1,500 00
5. Building an addition to Agricultural Hall		4,014 90
6. District representative work		4,000 00
7. Women's Insitutes		2,178 49
8. Office assistance		1,000 00
9. Introducing nature study in the public schools		5,529 85
	$	26,529 85

In 1912 the provincial financial year was changed to end on the 31st of December instead of on 30th of September. The accounts for that year, therefore, extend over a period of fifteen months from 1st of October, 1911, to 31st of December, 1912. In that fiscal period the total gross expenditure by Prince Edward Island for agriculture amounted to $20,550.72. The agricultural revenue was $5,036.71, of which $4,119.59 was derived from federal grants. The net expenditure of the province amounted therefore to $15,514.01. The largest expenditure was $6,640 for exhibitions. Other items were $1,415.52 for associations (live stock, fruit, and dairy), $1,984.04 for Farmer's Institutes, and $890.72 for seed fairs; $870 was expended on scholarships to pay the expenses of Prince Edward Island students at Truro, N. S. Practically nothing was spent on the island for direct educational instruction work. For the first time the grants under the Agricultural Instruction Act made it possible to undertake such work. As the Commissioner of Agriculture stated in his report: "The receipt of this money placed the Department of Agriculture in an entirely different position." It will be noticed that the main item in the 1912 grant was $4,000 for an Agricultural Hall. The first thing necessary to carry on educational work was the providing of a building in which classes could be held. It so happened that at this time there was available at Charlottetown a large frame building that had been used as a skating rink. This building was purchased for $2,250, and $1,602.34 was expended in making repairs and changes so as to render it suitable for holding short-course classes. A room was fitted up for holding agricultural meetings. This was also suitable for instruction in apple packing and similar work. The main portion of the building was admirably suited for live stock judging.

We now take up the work of 1913-14.

No. 1—Prince of Wales College, $4,000.

A branch of Agricultural Instruction was in 1913 established at Prince of Wales College. In August, Mr. Wilfred Davison, B.S.A., was appointed as instructor. From the 1st of September to the end of the year he taught agricultural botany to the students of the first and second year. From January to the end of the course in May he taught agriculture, particularly field crops. The 1st of January, 1914, Mr. W. J. Reid, B.S., was appointed live stock instructor of the department, and he gave the students of the second year a course in live stock from January to May.

The long course in agriculture is included under the head of agricultural education in connection with Prince of Wales College. It opened about September 15, and was conducted for one month before Christmas holidays. It opened again January 5 and continued to April 3. Professor Reid gave instruction in animal husbandry, Professor Davison in field husbandry, Mr. F. T. Morrow in dairying (particularly milk-testing and separating), Mr. T. A. Benson gave instruction in poultry husbandry, Prof. Blanchard, of Prince of Wales College, taught arithmetic and assisted with English, and Professor Ross taught English and rhetoric. Eleven students completed the long course, and seven others attended for periods varying from five to fifteen weeks. The Agricultural Hall was used for all the practical work in connection with Prince of Wales College students, and for nearly all of the long-course work.

Household science courses for farmer's wives and daughters were conducted in Prince of Wales College. The first course began January 5 and continued for two weeks. Three subsequent courses were held, and completed at the end of February. Instruction was given by Miss Katherine James, who at that time was Supervisor of Women's Institutes, Mrs. A. E. Dunbrack, Mr. F. T. Morrow, and others. The total number in attendance was ninety. Besides the ordinary household science subjects, instruction was given in milk-testing, gardening, and fruit growing. Short courses in household science were also carried on in the month of June in the Prince of Wales College for city women. They were carried on by Miss Grace Datcher. The number of students in attendance was eighty-two.

Up to October 1, 1914, the total expenditure under this head was $3,977.94, made up as follows:—

Salaries of instructors	$	1,888 00
Work on Agricultural Hall		532 78
Insurance of hall		100 00
Light, heat, and water		500 46
Scholarships		257 90
Miscellaneous		698 80
	$	3,977 94

A considerable portion of the above expenditures would serve also under item No. 2, "Short Courses." It is impossible to differentiate clearly between long courses and short courses. It might perhaps have been better to have put the two under one grant.

No. 2—Short Courses—$3,306.55.

Prior to 1913, farmers and farmers' sons who desired to attend short courses in agriculture were compelled to go over to Truro, N.S. Through this federal appropriation, provision was made for short courses in Charlottetown in January, 1913, and again in January, 1914. Prior to 1913 the province had no agricultural specialists outside of the Secretary for Agriculture. The attendance has been very large, and the work has been very instructive and stimulating.

These courses were held in Charlottetown in the Agricultural Hall and in Prince of Wales College. They consisted of courses in stock judging, animal husbandry, field husbandry, dairying, poultry husbandry, and packing of apples. These courses opened January 5, and continued for three weeks. The number of students in attendance was 250. Instruction was given by the regular provincial staff in agriculture, the Dominion staff resident in the province, and Mr. A. E. Dewar, Mr. F. T. Morrow, and Mr. Duncan Anderson.

Under the short course the expenditure to October 14, 1914, was as follows:—

Services of additional instructors	$	250 00
Building		375 40
Scholarships and expenses of students		1,049 84
Miscellaneous		405 88
	$	2,651 12

No. 3—Live Stock Judging—$1,000.

Apart from his work at Prince of Wales College, Professor Reid devoted himself to live stock instruction throughout the island. During the summer of 1913 he conducted classes in live stock judging, being assisted by Mr. Robert Robertson and some well-qualified live stock breeders and feeders. The attendance averaged about 100.

Classes were held at the following places: Calvin, Brookfield, Winsloe, Cascumpec, Peakes, Avondale, Wood Islands, Lower Montague, Victoria Cross, North Bedeque, and Georgetown. At Brookfield and Calvin a whole day was given over to the farmers and their families, a general picnic supplementing the instruction work of the afternoon. The attendance at these was reported to be 250 and 400.

Expenditure to October 1, 1914, was $996.83 as follows:—

Services of instructors	$	450 00
Equipment		73 83
Travelling expenses		96 10
Miscellaneous		376 90
	$	996 83

No. 4—Demonstrations in Live Stock and Poultry and Horticulture. $1,500.

Demonstrations in sheep dipping were carried on at fifty-six places during the months of June and July. At these, 10,347 sheep were dipped. As a result of these demonstrations, fifteen co-operative organizations were formed, and outfits purchased. Others were organized but could not at the time procure outfits.

The provincial department co-operated with Mr. T. A. Benson, representative of the poultry division of the Dominion Live Stock Branch, in establishing egg circles and in giving instruction in fattening and marketing poultry.

Very little was done in demonstration work in horticulture.

Up to the 1st of March, 1914, the expenditures were as follows:—

Services	$	250 00
Poultry supplies		928 38
Sheep dipping supplies		133 00
Miscellaneous		182 23
	$	1,500 00

No. 5—Agricultural Hall.—$4,014.96.

Additional class room was needed, and proper stabling for stock. Accordingly, an addition was built on to the rear of the agricultural building referred to before as having been purchased in 1912. The basement of this addition was equipped as a stable, and had a large room for live stock judging. The upper floor is used for classes and agricultural meetings. It was found that the large open portion of the main building was well suited for summer meetings, but it was difficult and expensive to heat it in winter. This addition now provides accommodation for winter work. The addition to the building in 1913 cost as follows: Land, $450. building, $3,541.33; insurance, $23.63; total, $4,014.96.

No. 6—District Representative Work—$4,000.

W. J. Reid, B.S.A., was engaged as instructor in animal husbandry. Part of his time he gave to long-course work in agriculture, and to instructing the second-year male students in Prince of Wales College. For four months he did district representative work in Prince County. The first work in which he was engaged was in organizing Live Stock Associations, visiting the farmers at their homes, and discussing with them the improvement of live stock. Mr. Robert Robertson did similar work in Kings County, for a period of 6½ months. He did not give all his time to live stock, but discussed rotation of crops and other work along this line. Mr. Leslie Tennant carried on district representative work for four months in Queens County. Dr. James McMillan, V.S., working out from Charlottetown, took up as his subjects the improvement of farm-buildings, better care of stock, and the care of stock generally. He also applied the tuberculin test in different parts of the province for the Cattle Breeders' Association. All these men made their head office at Charlottetown, coming in at the end of the week, and going out the first of the following week.

Up to October 1, the expenditure was as follows:—

Salaries.....	$ 3,229 84
Travelling expenses.....	765 45
	$ 3,995 29

No. 7—Women's Institutes—$2,178.49.

In March, 1912, Mrs. A. E. Dunbrack was engaged to do some judging at Household Science Exhibitions. She addressed some meetings held in connection therewith, told of the work that was being done by the Women's Institutes throughout Ontario and other places. As a result of the interest aroused it was thought advisable to engage her to address meetings in different parts of the province, and on the first of April, Miss Katharine James was employed as supervisor for Women's Institutes for Prince Edward Island. Mrs. Dunbrack worked with her until the end of March, after which Miss James continued the organization work until she had a group of twenty-two institutes organized, nearly all of them in western Queens.

Miss James organized the short courses on household science that were held in January and February of 1914, and left the service of the department at the end of February. Mrs. Dunbrack was engaged to assist Miss James with the short course during the months of January and February, and was appointed as supervisor of the Women's Institutes when Miss James withdrew. In March, 1914, Miss Helena McDonald was appointed as assistant to the supervisor. The Women's Institutes were expected to meet in the school houses of the

districts, and already much good has been done. Several schools have been thoroughly cleaned and repaired. In almost every district in which Women's Institutes have been organized, the school buildings and grounds have been improved and also there has been effected an additional interest in the educational work of the schools.

Up to October 1, 1914, the expenditures were as follows:—

Institute grants, 1913, 20 at $5	$ 100 00
" " 1914, 20 at $5	100 00
Services and travelling expenses	1,771 13
Other expenses	207 36
	$ 2,178 49

No. 8.—Office Assistance.—$1,000.

The appointment of permanent instructors and the inauguration of new lines of work made possible by the federal grant necessitated an increase in the head office staff. This grant was to provide for this extra clerical work. Up to March 31, 1914, $916 67 had been used, and before October 1 the entire appropriation had been expended.

No. 9.—Public School Agriculture.—$5,529.85

In order to introduce nature study successfully in the public schools it was felt that the teachers themselves must be given a training in nature study. This is now being given to a considerable extent in Prince of Wales College, and in order to supply the needs of the teachers who are already in the public schools, a summer school course for teachers was provided. It opened July 20 and continued for two weeks. In addition to the staffs of the Departments of Education and Agriculture the following instructors were also provided: F. G. Morehouse, Frederick F. Smith, H. N. Loomis, F. E. Heald, Morris D. Jones, D. W. Hamilton, and Julia E. Ives.

The course was arranged by Mr. Robert E. Campbell, Superintendent of Education. Teachers who completed the course were allowed travelling expenses and $5 towards living expenses; 273 teachers attended and received assistance out of this vote, amounting in all to $1,500. Every teacher signed an agreement to teach in Prince Edward Island for at least one year from 1st of July, 1913.

The following circular explains the scope and nature of the work.

To the Teachers:

The Department of Agriculture has decided to expend a portion of the Dominion agricultural grant in encouraging the teaching of elementary agriculture and nature study in the schools of this province and in improving rural education generally. As the first step in this work it has been decided to hold in Charlottetown a "summer school for teachers" beginning July 28 and lasting two weeks, the first session of which will open in Prince of Wales College Hall at 2 p.m., Monday, July 28.

The work of this summer school will centre chiefly around "Brittain's Elementary Agriculture and Nature Study," a book recently prescribed for use in the schools of this province; and an attempt will be made to show how the subject ought to be taught in our schools to secure the best educational results. Drawing and school management will form an important part of the course, and it is probable that classes will be organized in singing and physical exercise. In every subject, the services of the best available instructors will be secured, and no effort will be spared to make the school interesting and helpful.

Teachers desiring to attend must send in an application on the subjoined form, which must reach the Education Office not later than Saturday July 19.

Arrangements have been made for a single first-class railway fare good coming July 26 and 28 and returning up to August 13. The Department of Agriculture will refund the cost of this single first-class fare from nearest station, and will make a further allowance of $5 to every teacher whose work at the summer school has been satisfactory.

As the work done at this school may have an important bearing upon bonuses to be paid in the future, every teacher should endeavour to attend.

ROBERT E. CAMPBELL,
Superintendent of Education.

EDUCATION DEPARTMENT,
CHARLOTTETOWN, June 6, 1913.

Up to the 31st of March, 1914, the expenditure had been $3,340.31, leaving a balance of $2,189.54 for work during the summer of 1914. Since that date this amount has all been expended and the grant for 1914-15 drawn upon.

The main items of expenditure were as follows:—

Services of instructors	$1,015 32
Expenses of teachers in training	1,500 00

The following permanent appointments have been made under the Agricultural Instruction Act:—

Mr. Wilfred Davison, B.S.A., Professor of Agriculture in Prince of Wales College.
Mr. W. J. Reid, B.S.A., Provincial Live Stock Instructor.
Mr. Leslie Tennant, B.S.A., District Representative.
Mrs. A. E. Dunbrack, Supervisor of Women's Institutes, Miss Helena McDonald, assistant to Supervisor of Women's Institutes.

PRINCE EDWARD ISLAND LEGISLATURE.

"The increased grant received under 'The Agriculture Aid Act' enabled the Government to make progress in organizing a complete system of agricultural education co-related with the general system. Short Courses in household science have been established in Prince of Wales College. Long and short courses in agriculture have been arranged, part of the instruction being given in Prince of Wales College, and practical instruction in agriculture provided for those who are qualifying for teachers for our public schools. In addition to this, a science course was arranged for teachers who are now in charge of our schools and provision made for Women's Institutes, supervised by competent ladies, to work with the schools for the improvement of rural conditions. To carry on this work, an addition was built to the Agricultural Hall which is also being found very serviceable for agricultural gatherings of various kinds. A further extension of these several lines of work, which have been initiated, will, in the near future, complete a system of education in keeping with the requirements of an agricultural province.

"The problem of securing a thorough professional training for teachers has been engaging the earnest consideration of the Government. As a first step towards its solution, a very successful summer school for teachers was held in Prince of Wales College during the summer vacation. The best instructors

available were secured, and for two weeks nearly half the teachers of the province devoted themselves assiduously to acquiring greater skill in their profession. In the improved work of many of the teachers in the rural schools, the beneficial effects of this 'short course' for teachers is plainly discernible. It is the intention of the Government to further develop this course."—Extract from Speech from the Throne, opening of Prince Edward Island Legislature, March 11, 1914.

SECTION 3.—NOVA SCOTIA.

The following is a statement of the apportionment of the grant of $54,288.15 paid to the province of Nova Scotia for the year ending 31st of March, 1914, as set forth in the agreement between the Minister of Agriculture for Canada and Hon. Geo. H. Murray, Commissioner of Agriculture for Nova Scotia. As provided for in the agreement, this list contains some variations made from time to time to meet the requirements of the provincial work. For instance, it was found to be advisable to increase the grant for agricultural college work from $10,000 to $12,000, and the grant to complete the college buildings from $9,000 to $10,000. The spread of insects and plant diseases called for increased instruction, and the grant for that purpose was enlarged from $6,000 to $8,500. These and other slight changes were provided for by cutting down item No. 4, from $10,000 to $3,900.

1.	Additions to the staff and increased means of efficiency at Agricultural College	$ 12,000 00
2.	Balance due on buildings constructed out of grant for 1912	10,000 00
3.	Agricultural education in the rural schools, including the conducting of a summer school for the teachers at Truro, the giving of extra grants to teachers who have school gardens, and assistance to school boards in establishing school gardens and the employment of a director of rural education	6,700 00
4.	Employment of men to carry on demonstration work in the country and at the fall exhibitions together with materials used for this purpose (including the purchase of a ditching machine)	3,900 00
5.	Entomological and fruit-growing investigation and educational work	8,500 00
6.	Dairy education, including half salary and expenses of the dairy instructor, and the holding of meetings	3,000 00
7.	Educational work poultry husbandry	500 00
8.	Assistance in publishing of farmer's bulletins, leaflets, etc	500 00
9.	Demonstrations with fertilizer, especially ground limestone, which has not been used before in the province	300 00
10.	Organization of Women's Institutes	2,000 00
11.	Short courses during the winter of 1913–14	4,400 00
12.	Special educational work renovating old orchards	1,000 00
13.	Contingencies of any kind connected with or required for the successful carrying on of the above mentioned lines of expenditure	1,488 45
	Total	$ 54,288 45

It will be seen that a considerable portion of the grant was expended at and in connection with the Agricultural College, which is located at Truro. A few words of explanation may be in order in this connection. In 1885 a teacher of agriculture was appointed on the staff of the provincial Normal School at Truro. Three years later land was purchased at Truro and buildings were erected for carrying on work in what was then called the Nova Scotia School of Agriculture, the two schools at Truro being in affiliation. In 1905 the work carried on at Wolfville in the School of Horticulture was transferred to Truro, and the new institution became known as the Nova Scotia College of Agriculture. The principal of the college, Melville Cumming, B.A., B.S.A., is also Secretary for Agriculture for the province. All the provincial agricultural work, therefore, is centered at and directed from Truro. In addition to the college staff there are here located the Superintendent of Agricultural Societies, the Provincial Dairy Superintendent, the Provincial Entomologist, and the Director of Rural Education. There is a close relationship between the work of the college and the provincial work of various departmental officers. The expenditure of moneys at Truro, therefore, in buildings, equipment, and staff serves the double purpose of

increasing the efficiency of the college and also of equipping the provincial staff for larger and better work.

In 1912, under Agricultural Aid Act, $34,288.45 was allotted to Nova Scotia. There were no special limitations placed on the grant for that year. The Nova Scotia Department of Agriculture used $3,000 of this grant to assist agricultural societies in the purchase of pure-bred stock. The remainder of the grant, $31,288.45 was all expended upon buildings and equipment at the college. Referring to this expenditure, Principal Cumming in his report for 1912, wrote as follows:—

> "This contribution to the Province of Nova Scotia came at a most opportune time in the history of the college. We had outgrown our accommodations and had not room to provide even sufficient class rooms for the increasing number of students. Aside from the fact that this contribution was a most opportune one, the college faculty appreciate the fact that, in giving the major part of the grant to be spent on buildings at the Agricultural College, the Dominion Government put its stamp of approval upon the endeavours which we at Truro have been making to promote agricultural education in the East."

It is not out of place to state that the Nova Scotia Agricultural College at Truro is open to students from New Brunswick and Prince Edward Island, and indirectly these other two provinces have participated in some degree in the expenditures of the federal grant at Truro. The buildings referred to here, erected in 1912 and 1913, were two: (1) An addition to the main college building, and (2) a separate horticultural building with greenhouses attached. The addition is 80 feet by 60 feet, two stories in height, with basement. In it is an Assembly Hall, with a seating capacity of 750. I might state that I had the pleasure of participating in the formal opening of this hall at the closing of the College term, 16th of April, 1914.

The public records of the province show the following expenditures on these buildings:—

In 1912	$	1,402 80
In 1913		39,636 78
In 1914		999 98
Total cost	$	42,039 56

The above cost was provided for as follows:—

Agricultural Aid Act, 1912	$	31,288 45
Agricultural Instruction Act, 1913		10,000 00
Contingencies		751 13
	$	42,039 58

The above, therefore, accounts for the second item in the list, and also for a portion of item 13. To explain the expenditure satisfactorily it was necessary to revert to the year 1912, and having dealt with this item No. 2, we may now take up No. 1.

Item No. 1—Agricultural College—$12,000.

This sum was used to supplement the regular provincial appropriations for the maintenance of the college and farm. The financial year in Nova Scotia ends on the 30th of September. The expenditure for the year 1st of October, 1911 to 30th of September, 1912, was $32,886.65.

The expenditure for the year 1st of October, 1912 to 30th of September, 1913, was $43,924.66.

Of this latter amount, $31,000 was provided by the province, and $9,924.66 came from the federal grant. This left $2,075.34 carried over to the subsequent financial year of the province, which has been expended and will appear in the records of the province for the year ending 30th of September, 1914.

This $12,000 has been expended along following lines:—

(*a*) Increasing salaries of some members of the staff.
(*b*) Additional Instructors.
(*c*) Maintenance of laboratories.
(*d*) Experimental work, principally in horticulture.

The advice of the Minister of Agriculture to the various provincial departments has been to secure good men, the best men. The most effective and productive expenditures are in the securing and retaining of good men. In eastern Canada, salaries of teachers and instructors have not been very high. The result has been that some of the best men in the East have from time to time been induced, through higher salaries, to go to western provinces, or to the United States. One of the benefits of this federal grant has been that various provinces have been enabled to secure and retain good men. Some few years ago many of our most promising agricultural instructors found their way to the United States. Through these federal grants, several Canadians have been brought back to Canada and are now engaged in agricultural instruction. I may here mention one case in Nova Scotia. The position of farm manager and live stock instructor became vacant. A Canadian of high standing and extensive experience in the United Sattes was available, but not at the salary provided out of the regular funds. We were appealed to. Would we approve of taking $1,000 out of the federal grant to supplement the regular salary to secure this man. We not only approved, but strongly recommended it. The result is that Nova Scotia has brought back into her work a Maritime Province man, Professor Trueman, and has been able to retain the services of other men who are doing excellent work in the province. The same thing has occurred in other provinces, and while we are not encouraging extravagance, we are at all times strongly urging the various provincial departments to secure the best men and to pay them fair salaries. Assistants have been provided through this grant in live stock, horticulture, entomology, dairying, and poultry, bringing the teaching staff up to fifteen in number.

Prior to the year 1913 the only horticultural work at the college consisted of a course of lectures and a very meagre amount of garden and orchard work. In 1913 the province provided for the purchase of 30 acres for experimental work. Out of the federal grants a fine horticultural building was erected and equipped, additional instruction provided, experimental work undertaken, and a real horticultural department started, a most important line of work in a province that presents such fine opportunities for orchard and garden production, and where difficult problems are presenting themselves every year. The enrolment in the college for the year 1913-14 was as follows:—

	Regular 2-Year Course.	Short Course.
Nova Scotia	54	135
New Brunswick	27	54
Prince Edward Island	8	3
Others	13	11
	102	223

The above figures for attendance at the short course refer to that held in January, 1913; the short course held in January, 1914, had an enrolment of 351, the largest in the history of the college. The college provides a two-years course, and grants a diploma to successful students. Those desiring a university degree in agriculture are enabled to enter the third year's course at any of the other western colleges, such as Macdonald College, Quebec, or the Ontario Agricultural College at Guelph.

The principal of the college in his report for 1913 makes this comment:—

> "I think that anyone who compares our present equipment with that of two years ago, and who inquires into the character of the work which is being done, will bear tribute to the returns which have been given to the public for this much appreciated assistance received from the Dominion Government at Ottawa."

No. 3.—Agriculture in Rural Schools—$6,700.

This work was directed by the Department of Education, and the moneys are paid out by the Department of Agriculture on the recommendation of the former department.

The intention was to give to public school teachers a training and equipment that would enable them to teach elementary agriculture and nature study to the pupils of their schools.

Naturally, such a course was provided at Truro in connection with the provincial Normal School, where also the staff and equipment of the Agricultural College were available. First of all, Mr. L. A. DeWolfe, B.A., was appointed Director of Rural Education. He is a graduate of Dalhousie University, has had experience in teaching at Colchester Academy, Truro, and St. Louis, U.S., and was known to be an enthusiastic nature student. As his title implies he directs all the work at Truro, supervises the carrying out of the instruction throughout the province, and co-operates with the school inspectors in the inspection of the teaching in the schools. He was appointed in October, 1913. Mr. C. L. Moore, Lecturer in Biology at Dalhousie University, Halifax, was appointed principal of the Rural Science School at Truro. He is employed from 1st of May to the middle of August. For two months he gives instruction to the teachers in training, and from about the beginning of July to the middle of August he directs the summer school, the Rural Science School, as it is called, made up of teachers who attend during the summer vacation. At the end of each summer session an interim certificate is granted, and after attendance at three sessions a regular diploma is granted. Teachers in attendance on this course are allowed about $15 each to help cover cost of transportation and board. Teachers who are duly certificated and who teach nature study and agriculture in their schools are, upon recommendation of the county inspectors, allowed bonuses varying from $30 to $90. These allowances and bonuses are provided partly out of the federal grant and partly out of the provincial funds. Mr. De Wolfe has used a small portion of the fund in encouraging the pupils to organize school clubs and to hold fall fairs where their own garden products and their own poultry can be exhibited. For each fair, approxmiately $25 was allowed out of the grant, the rest of the funds required being raised by private subscription or contributed by the agricultural societies. The value of the fair consists, of course, not in the mere prize-winning or the competition of the day, but in the well-directed and supervised work of the entire summer leading up to the exhibition of the products in the fall.

The following "constitution and by-laws" will indicate the close relationship of this work to agricultural improvement:—

"CONSTITUTION.

"*1. Name.*—This club shall be known as the (Name of Section).... .....School Children's (Name of Product)..... .....Club.

"*II. Purposes.*—The purposes of this club are: to make out-door life more attractive, to increase our knowledge of nature in all her forms, to make our best approach the best in garden production, to experiment in the selection of garden seeds, the use of fertilizers, and the cultivation of the soil; in short, to improve ourselves, our homes, our schools, and our town in every way possible.

"*III. Members.*—Any pupil over 10 years of age shall be eligible for membership. Those under ten who have reached grade V are eligible.

"*IV. Officers.*—The officers of this club shall be a president, vice-president, and secretary. The teacher shall have the general supervision of the club work. Officers shall be elected semi-annually.

"*V. Reports.*—The secretary shall send a report not later than December 1st of each year to the Director of Rural Science Schools, Truro, N.S.

"*VI. Meetings.*—The club shall meet fortnightly, or as often as suggested by the teacher. It is desirable that the parents attend the club meetings.

"BY-LAWS.

"1. Members of the club must conduct themselves properly at all times; and must read from literature that will help them in their work.

"2. Members are permitted to choose club colours; and may make pennants for display at their meetings, at exhibits, and wherever deemed proper by the teacher.

"3. In contesting for garden prizes, the produce and the land must be measured by the pupil and certified by two disinterested persons.

"4. No pupil may win more than two prizes until every contestant has received a prize.

"5. In estimating profits, two dollars per acre shall be charged as rent of the land. The boy's work shall be valued at 10 cents an hour. Horse work shall also be 10 cents an hour. Manure shall be charged at $1 per cart load. Seeds and commercial fertilizers shall be charged at their actual cost. The use of hand tools shall be charged each year at the rate of one-tenth of their cost. (With care they should last ten years.)

6. Prizes shall be awarded on the following basis:—

	Points.
Greatest yield per acre	20
Best exhibit of produce	20
Best kept garden	20
Best written account of work	20
Best profit on investment	20
Total	100

No. 4—Demonstration Work—$3,900.

This amount stood originally at $10,000, when it was intended to purchase a ditching machine and to employ a number of men in giving instruction in various parts of the province in draining and other lines of agricultural work. It was decided better, however, to enlarge other lines of agricultural work, and so this vote was reduced. The principal work carried out under this was an extensive series of demonstrations in the counties of Cape Breton, particularly in the growing of turnips and instruction in crop rotations. In addition instruction or demonstration in orcharding was carried on in the fall of 1913 and the spring of 1914. One demonstrator was placed for three months in Lunenburg and Queens counties, and one for three months in Digby, Cumberland and Cape Breton. Their services were available to all apple growers. It will be noted that this instruction was for the purpose of assisting in fruit growing outside of the Annapolis Valley.

No. 5—Fruit Growing and Entomological Work—$8,500.

First of all, this grant was used to man the staff of the Provincial Entomologist, from four to six assistants being employed part of the year, going through all the fruit-growing sections, giving instruction as to the San José Scale and Brownatail Moth, how to detect and identify these insects, and how to exterminate them.

Reference has been made to the erection of the horticultural building out of the federal grant. To complete it and make it available for entomological work it was necessary to construct glass houses and to furnish it with entomological apparatus and equipment. The larger portion of this vote was used for this purpose, thereby giving a complete outfit for instruction purposes, and also facilities for investigation in connection with insects and other pests. The expenditure of this vote resulted as follows:—

Salaries and expenses of Provincial Entomologist and of his field staff.....	$	3,966 29
Erection and equipment of entomological buildings.....		4,507 71
Miscellaneous.....		26 00
	$	8,500 00

The assistants above referred to were all graduates of the college, with practical horticultural training, and the secretary of Agriculture reports that as a result of their field work, going from farm to farm and giving direct instruction, great benefit has resulted. He says, "This work has been extremely effective."

No. 6—Dairy Education—$3,000.

Out of this vote the department paid one-half of the salary of the Provincial Dairyman, and was enabled to employ an assistant, who spent his time in visiting the creameries and cheese factories and giving instruction to the makers. The Provincial Dairyman devoted himself to the organization of new creameries. Since 1912 seven have been started, six as farmers' co-operatives, and one in Cape Breton erected by the provincial department. The grant therefore, was used as follows:—

(*a*) In paying one-half of the salary of the Provincial Dairyman.
(*b*) The salary of his assistant, and
(*c*) Their expenses in travelling, organizing, and holding meetings.

No. 7—Poultry Work—$500.

This appropriation was a small one but it illustrates what enlarged work can be done by a small additional appropriation, when the province has already provided the organization or machinery. The Provincial Poultryman is also lecturer at the college, his salary being paid, one-half out of the general fund and one-half by the college. Out of the federal grant, $500 was allotted for what may be called extension work, organizing egg circles and carrying on demonstrations at fall fairs. A short note by the poultryman, Mr. J. P. Landry, will indicate the line of work:—

> "The amount placed at my disposal was of great assistance in carrying out the policy of organization and instruction which we had undertaken some years ago. Two hundred more coops have been purchased for the holding of poultry shows, and models of houses, trap nests, etc., were made and taken to fall exhibitions and winter poultry shows. These models enabled me to inform interested persons how to construct the best and most improved houses, etc., in a very plain and simple manner."

No. 8—Bulletins, etc.—$500.

This vote was used for the printing and distribution of bulletins and leaflets along various lines of agricultural work.

No. 9—Fertilizers—$300.

This vote was used for demonstrating in various parts of the province the value of ground limestone on various soils, and in the production of different crops. The results so far have been of considerable value.

No. 10—Women's Institutes—$2,000.

This grant covers the salary and expenses of the Superintendent of Women's Institutes, Miss Fraser, the cost of speakers at local meetings, and the expense of holding an annual convention. The first move towards organizing and instructing the women of the farms of Nova Scotia was made in 1913, and the initiation and carrying on of this work became possible for the first time through the first federal grant under the Agricultural Instruction Act.

Miss Jennie A. Fraser was appointed Superintendent in 1913. In July of that year she began the work of organizing local institutes. Accompanied by Mrs. Laura Rose Stephen, who had had experience in Ontario in instruction work, she visited Pictou, Colchester, and Cumberland counties and, as a result eight institutes were organized. In September, accompanied by Miss Susie Campbell, of the Ontario Women's Institute staff, she visited Hants, Kings, and Annapolis, and six more institutes were organized.

The annual convention was held in Truro in January, 1914. At the time of holding the short courses at the college, twenty-seven delegates attended from the local institutes. Five sessions were held and plans laid for extending the work. Miss Fraser thus expressed herself:—

> "I consider the work already accomplished during these few months nothing short of marvellous, and it certainly justifies the step taken by the department."

Seventeen institutes in all were organized, with an average membership of twenty-five. The expenditure of the $2,000 of federal grant appears to have been well justified; it has laid the foundation of what promises in time to be a far reaching and most important work. The Secretary for Agriculture, referring to this work, stated: "The Dominion appropriation arrived at an opportune time."

No. 11—Short Courses—$4,400.

This money was expended during the winter of 1913-14.

In order that instruction might be given in various parts of the province along lines similar to that provided at Truro, it was necessary, first of all, to provide accommodation. Arrangements were made with the agricultural societies for providing permanent buildings at Yarmouth (Yarmouth County), Bridgewater (Lunenburg County), Musquodoboit (Halifax County), and Shubenacadie (Hants County).

Separate buildings were erected or special quarters set apart, heating was provided, seats secured, and everything arranged so that instruction could be given during the winter months. The sums expended out of the federal grant were as follows:—

[illegible]	$ [illegible]
[illegible]	[illegible]
Bridgewater	925 00
Musquodoboit	600 00
	$ 2,428 84

These amounts were paid to the Agricultural Society and the society supplemented or secured the amounts necessary to complete the buildings. The approximate cost of the buildings in the above order were about as follows: $1,500, $1,000, $2,000, $700. These buildings were erected in suitable localities and were available also for exhibition purposes during the fall fair. An examination I made of the building at Musquodoboit showed that it was admirably adapted to the holding of the courses.

The first courses given at these four places lasted for three days. The instruction in live stock, pure seed, soil cultivation, horticulture, veterinary science, and poultry management was provided by the Agricultural College staff.

The following is the official report as to attendance:—

> "Never before had such practical instruction been given at the centres where the courses were held, and that this was appreciated was evident by the fact of the steady growth in attendance from session to session. It was very noticeable at every course that any person who attended one session, no matter from what motive, became interested and attended the remaining sessions of the course. This resulted invariably in a steady growth in attendance and interest from the first day to the last of the course. The Yarmouth course, for example, opened with 122 students, which number increased until it reached 170. The Bridgewater course opened with an attendance of 67 students, which grew to 85 despite the thermometer ranging from 15 to 20 degrees below zero. Musquodoboit opened with 60 and closed with 160, notwithstanding that a heavy storm on the day preceding the opening blocked the roads and made it extremely difficult for people to get there at all. In Shubenacadie the course opened with 37 and closed with 92, despite the fact that the course was held at a period when the first good sleighing of the season gave the farmers a chance to haul their lumber and wood supply.
>
> "The above-mentioned figures indicate the actual attendance at one session. The total number of names enrolled was somewhat over 200 at Yarmouth, 120 at Bridgewater, 175 at Musquodoboit, and something over 100 at Shubenacadie."

It is worth mentioning that when the short course was in session at Musquodoboit, the school inspector, Mr. Creighton, called together at the same place

the teachers of his county and, with the co-operation of Mr. DeWolfe, made plans for experimental work in gardening and poultry. The products were on exhibition at the fair held in September, which I attended.

In addition to the four courses above mentioned, an apple-packing school was held at Kentville during the month of February. It was in charge of Mr. P. J. Carey, of the Dominion Fruit Branch, who was assisted by W. S. Blair, Superintendent of the Experimental Farm, Kentville, his assistant, Mr. J. H. Robinson, and Professor Brittain, of the Agricultural College, Truro. Upwards of 100 received instruction. This work was thoroughly appreciated, and requests have been made for more courses of a similar kind longer in duration, not only at Kentville but at other points in the fruit-growing districts.

The usual short course at the college at Truro was held from January 6 to January 16, 1914.

No. 12—Old Orchards, $1,000.

This work, which is similar to that carried on in other provinces, consisted in giving farmers direct practical instruction in the renovating of old orchards that had been neglected, co-operating with them in cultivating, pruning, and spraying. The farmers were shown not what others could do, but what they themselves could do in their own orchards through putting into practice the best methods of orchard operations. The work was not done for them, but they were shown how to do the work for themselves. This form of demonstration and instruction is most effective and has a most stimulating effect upon all lines of agricultural work.

No. 13—Contingencies, $1,488.45.

As the agreement set out, this remainder of the grant was available for supplementing any of the previous grants for "contingencies" of any kind connected with or required for the successful carrying on of the above-mentioned lines of expenditure. As stated before, $751.13 of this vote was used in connection with building construction provided for under item No. 1.

All the above appropriations had been expended prior to the first day of September, 1914, according to the official records of the province, and the expenditures were made along the lines laid down in the agreement.

The following is a statement of the expenditures of the federal grant by the province of Nova Scotia in connection with salaries of instructors. In some cases the full year had not been reached at time of making investigations and report.

Rural Science School:		
2 permanent instructors, in full	$ 3,060 00	
$ " " in part	900 00	
		$ 3,960 00
Entomological Investigation:		
2 permanent instructors, in full	$ 1,275 00	
13 temporary instructors, one-half	1,745 59	
		3,020 59
Dairying:		
1 permanent instructor, in full ..	$ 725 33	
1 " " one-half	875 00	
2 temporary instructors, in part	238 00	
		1,838 33
Women's Institutes:		
1 permanent instructor, in full	$ 250 00	
2 temporary "	200 00	
		450 00
Farming Demonstration:		
3 permanent instructors, in full	$ 483 32	
1 temporary "	904 69	
		1,388 01
Total		$10,264 93

The year's grant may be summarized as follows:—

[illegible]	[illegible]
Buildings	16,936 55
[illegible]	[illegible]
[illegible]	[illegible]

The agreement set out that these federal appropriations were not to be used to curtail the regular provincial expenditure for agriculture. The following statement of expenditure taken from the official records shows that this condition in the agreement has been met:—

	Year ending [illegible] 1912	Year ending Sept. 30th 1913
	$	$
Agricultural college and farm	[illegible]	34,000 60
[illegible]	11,588 05	12,157 84
[illegible]	[illegible]	13,080 99
[illegible]	4,744 87	3,582 27
[illegible]	2,395 92	1,534 01
Live stock improvement	[illegible]	[illegible]
Model orchards	[illegible]	[illegible]
Dairying	[illegible]	926 16
[illegible]	445 55	621 84
Field crops	298 50	[illegible]
Printing and advertising	204 26	134 35
Miscellaneous	3,322 46	1,816 24
[illegible]	6,718 79	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	9,433 17	7,153 36

The public accounts of Nova Scotia for the year ending September 30, 1913, set out the total expenditure for agriculture as being $101,236.98. The expenditure of the "Dominion Aid" money is set out in separate statements, amounting in all to $12,734.48; except in the case of the Agricultural College, where the amount is simply added to the provincial appropriation of $34,000. The total expenditure under this head was $43,924.66. Of this $9,924.66 was federal money. The statement, therefore, stands thus:—

Total agricultural expenditure		$ 101,236 98
[illegible]	[illegible]	
" " college	9,924 66	22,659 14
Total provincial expenditures		$ 78,577 84

The above amount $22,659.14 represents only that portion of the federal grant expended up to the 30th of September, 1913; the remainder of the grant was expended subsequent to that date.

This report on Nova Scotia may very fittingly be closed by reproducing the following extracts from the Speech from the Throne and the address of the Premier at the opening of the Nova Scotia Legislature, 1914:—

> "Everywhere through the province the stimulus of agricultural education is showing itself in improved methods of cultivation. The largely increased attendance of young men at the short courses at the agricultural college is evidence that the effort to create a greater interest in agricultural development is appreciated. The notable advance in

the number and production of creameries shows that the principle of co-operative dairying is steadily gaining ground, and that advantage is being taken of recent legislation for the promotion of dairying. Successful agricultural extension work is being carried on through demonstration plots and by short courses of instruction at various centres in the province. The work of organizing Women's Institutes during the past year has met with gratifying favour, and I am sure these will exercise a most important influence in our rural communities. The grants received from the Dominion Department of Agriculture have enabled the Government of this province to carry on more extended work for the benefit of the industry."—From the Speech from the Throne.

"Between the Provincial and the Federal Governments there is a joint jurisdiction in respect to agriculture. There can be no objection to the Federal Government spending money in the province for the encouragement of agriculture. What they desired in that connection was that there should be a certain measure of co-operation between the two Governments. They wanted to carry out certain new work; they wanted to do something which was not already being done. That was a wise policy and, so far as constitutional questions are concerned, there could be no conflict of jurisdiction, because the Government at Ottawa already had jurisdiction to come into the province and expend money in connection with agriculture in any way they liked without consulting the Provincial Government."—(From address of Premier Murray, Commissioner of Agriculture.)

SECTION 4.—NEW BRUNSWICK.

The following is the statement of apportionment of the grant of $44,509.93 made to the province of New Brunswick for the year ending March 31, 1914:

1.	Equipment and maintenance of agricultural schools	$ 6,000 00
2.	Equipment and maintenance of dairy schools	2,000 00
3.	Short courses in agricultural work	1,000 00
4.	Provincial officers to instruct or inspect agricultural work	2,000 00
5.	Director of elementary agriculture and expenses	1,500 00
6.	Printing and distributing of bulletins	1,500 00
7.	Courses of training for teachers	500 00
8.	Equipment and maintenance of school gardens	1,500 00
9.	Teachers in agricultural schools	4,600 00
10.	Travelling instructors	14,200 00
11.	Organization of Women's Institutes or other associations for women of rural parts	2,000 00
12.	Instruction in Domestic science	200 00
13.	Training of teachers in domestic science	200 00
14.	Demonstration trains	2,400 00
15.	Demonstration work in drainage, soil cultivation and crop production	4,500 00
16.	Apiculture	500 00
17.	Contingencies of any kind connected with or required for the successful carrying on of the above mentioned lines of expenditure	509 93
	Total	$ 44,509 93

An examination of the official records of the province showed that all of the above amounts had been expended prior to September 1, 1914, with the exception of the following amounts, which on that date remained to the credit of the various lines of work:—

No. 6.	Printing and distributing bulletins	$ 592 17
No. 9.	Teachers in agricultural schools	2,137 74
No. 12.	Instruction in Domestic Science	155 60
No. 13.	Training of Teachers in Domestic Science	177 80
No. 16.	Apiculture	349 44
No. 17.	Contingencies	66 50
	Total unexpended	$ 3,479 25

In the original agreement the amount set aside for travelling instructors was $6,000. It was found, however, that enlargement of this work called for more money. On the 2nd of April, 1914, the Minister of Agriculture, in accordance with the power granted in the agreement, gave permission to increase this sum. The extra $8,200 was provided for by decreasing the amounts under other allotments. The above statement of expenditure is made up after these variations have been taken in. The financial year of New Brunswick ends with the 31st day of October. The grants were made for the year ending 31st March, 1914. They do not lapse, but are available until expended.

No. 1.—Equipment and Maintenance of Agricultural Schools.—$6,000.

On my first visit to New Brunswick in the summer of 1912 I was informed by the premier, Hon. J. K. Flemming, that the executors of the estate of the late L. P. Fisher of Woodstock, Carleton county, had funds available for agricultural and technical training. I was requested to confer with them. At that time there were no facilities for teaching agriculture within the province. Students desiring instruction were sent to the Agricultural College, Truro, for both the

two-years' course and for the short courses. It appeared desirable to have an agricultural school in New Brunswick, where short courses could be held and where the preliminary work of an agricultural college could be carried on. In discussing the matter with Premier Flemming and Mr. A. B. Connell, one of the executors, I suggested that if a suitable building were provided out of the Fisher estate, the Provincial Department of Agriculture could use a portion of the federal grant for equipment and maintenance and also for the services of instructors. Plans of the agricultural schools in Alberta were procured as a guide or suggestion. In discussing, from time to time, with members of the Government the matter of agricultural schools it was suggested that if one school could be provided at Woodstock, another at Sussex, and a third in the northern section of the province the needs of special agricultural teaching could, for some years, be fully met, as the college at Truro was open and available to all three Maritime Provinces. Suggestions have been made that the most economical plan for these three provinces would be for New Brunswick and Prince Edward Island to erect and conduct agricultural schools, and for the three provinces to unite their forces to establish one Maritime College at Truro with a full four years' course open on the same terms to all three provinces. With the buildings now available at Truro, and under construction, fairly good accommodation will be had. The chief additional expense would be in the salaries of additional instructors. This could be met by New Brunswick and Prince Edward Island providing the additional teachers, who would be available for extension work in their own provinces during one-half of each year. It would be appropriate and desirable if, through The Agricultural Instruction Act appropriations, some such scheme could be worked out, and the Maritime Provinces be provided with an agricultural college that would fully meet all the requirements.

The Fisher Vocational School at Woodstock was completed during the winter of 1913-14 and presented to the Provincial Department of Agriculture. The following description of the building is furnished by Mr. R. Newton, B.S.A., Director of Agricultural Education. It is included in this report because the erection of this building is a direct outcome of the federal grant, and the school is a part of the provincial equipment:—

> "*The Building and its Equipment.*—The building is 53 by 102 feet, very substantially built of brick, and very attractively finished throughout in cypress, in the natural colour. The first floor has two rooms suitable for offices, a few small storage rooms, and four class rooms, equipped at present for cooking, sewing, laundry work, wood-working, and draughting. The second floor has three offices, a room suitable for museum and library purposes, and four class rooms, one of which is equipped as a field crops laboratory, another as a horticultural laboratory, and a third as a lecture room, with table-arm settees accommodating 70 students. The fourth class room has not yet been equipped but will probably be fitted up as a biological laboratory.
>
> "In the basement, besides furnace room and lavatories, there is a demonstration room, 34 feet square, with concrete floor and brick walls, suitable for purposes requiring the use of soil or other materials, which would damage the polished woodwork of the class rooms upstairs. In the basement also is the live stock judging room, 34 by 51 feet, with a platform at one end, and seats accommodating over 100 students, built in tiers along one side and one end of the room, leaving a large space vacant for live stock used in the judging demonstrations. This room is made to serve as an assembly room for large meetings, by placing folding assembly chairs in the space ordinarily reserved for the judging work. In this way about 300 people can be comfortably seated."

Out of $6,000, $4,394.86 was used for purchase of furniture and the general equipment of the school at Woodstock. The remainder was expended on the school at Sussex.

No. 9.—Teachers in Agricultural Schools.—$4,000.

This appropriation logically follows item No. 1. Mr. Robert Newton, B.S.A., a graduate of Macdonald College, was appointed to take charge of the agricultural school work the first of January, 1914, at a salary of $1,800 a year, and in June of the same year, Mr. B. T. Reid, B.S.A., was appointed his assistant. Mr. Newton began work at Woodstock by conducting a three weeks' course in March, 1914. His staff was composed of all the members of the provincial department, whose salaries are paid for out of vote No. 10 (travelling instructors), assisted by Prof. Boving, and Messrs. O. E. Wetmore and Andrew Elliott.

Horticulture, Messrs. Turney, Gorham and Flewelling.
Bee-keeping, H. B. Durost.
Field crops, Messrs. Newton, Boving and Mac.
Soil management, Messrs. Newton, Durost and Wetmore.
Live stock, Andrew Elliott.
Dairying, C. W. McDougall.
Poultry, Seth Jones.

"*The First Short Course.*—The school was opened with a three weeks' course beginning March 9. The first week was devoted to horticulture and bee-keeping, the second week to field crops and soil management, and the third week to live stock, dairying and poultry. Students were encouraged to stay for the whole course, but the programme was so arranged that those who could afford to stay only one week could get some part of the work complete in that time, and quite a number took advantage of this plan.

The programme was planned to meet the needs of the average farmer, and to cover the problems met with in ordinary farm practice. Practical demonstrations and lantern lectures were features of the work.

The average attendance at the regular sessions during the day was about forty for the first week, fifty for the second week, and eighty for the third week. At the evening sessions the attendance was much larger, reaching as high as three hundred and fifty. A number of townspeople came to these, in addition to a large number of farmers from the surrounding district who could not come in during the day. As this was the first agricultural short course to be held in New Brunswick, the attendance was very encouraging. A noticeable feature was its steady increase as the course progressed; those who attended one session remained if possible, for the rest."

When not engaged in conducting classes, the Director of Agricultural Schools and his assistant are engaged in instruction work among the farmers.

As the appointments were not made until 1914, only a portion of this vote had been used up to the first of September. The remainder is being used for the continuance of the work during 1914-15.

No. 2—Dairy Schools—$2,000.

The provincial department for some years has been interested in dairy work at Sussex. It erected the dairy building which has been operated by the Sussex Dairy Company. Short courses in dairying have been conducted there for some years. A new building is being erected at Sussex adjoining the old

dairy building. The tender for this building is $28,500. The proposal is to issue government bonds to cover this, the same to be met out of annual payments to be taken from the yearly grants under the Agricultural Instruction Act. The building will be equipped with the best dairy apparatus, and short courses will be conducted there as at Woodstock. When not used for teaching, the building will be used by the Sussex Dairy Company.

To meet the requirements of the northern district where a large proportion of the population are French Canadians, a dairy school is being provided for at St. Hilaire, Madawaska county. Thirteen cream-gathering stations have been combined into what is known as the Madawaska Dairy Company. This company will erect a building, the provincial department will equip it, and the Dominion Dairy Branch will operate it for five years. Under the Agricultural Instruction Act the provincial department will conduct a dairy school at this plant.

Taking votes Nos. 1 and 2 together we found the following expenditures made up to 1st September, 1914:—

Woodstock, equipment	$ 4,394 86
Sussex building	3,982 50
St. Hilaire and Sussex, for equipment	3,610 82
	[illegible]
Appropriations 1913-14	8,000 00

Thus it will be seen that up to the first of September, 1914, the total appropriation for 1913-14 had been expended, and $3,988.18 out of the appropriation for 1914-15.

No. 3—Short Courses—$1,000.

This vote was used to cover the expenses of short courses held at Woodstock and Fredericton. Under vote No. 1 will be found some notes on the courses held at Woodstock. The vote covers the services of instructors outside of the regular staff of the department. Up to July 15, the expenditures amounted to $1,297.39. This accounts for the entire appropriation for 1913-14, the remainder, $297.39, being paid out of the appropriation for 1914-15.

No. 4—Instruction Work—$2,000.

The potato crop is one of the important products of New Brunswick agriculture. During the past two years much attention had been given to the safeguarding of this crop, as large quantities are exported. During the past year the placing of an embargo on this crop by the United States has increased the attention paid to it. The department has, during 1914, employed from eight to ten practical men to go from farm to farm to give instruction in the handling of this crop, and to inform growers as to potato diseases. These men were engaged at $2 a day and expenses. From December 8, 1913, to September 17, 1914, the total expenditure was $2,605.17, which accounts for the total appropriation of $2,000 which was used for the purpose above stated.

No. 5—Director of Elementary Agriculture—$1,500.

Mr. R. P. Steeves, B.A., was appointed to this position in August, 1913, starting with a salary of $1,500 a year, and having an annual increase of $100 up to $1,800. Mr. Steeves had had a very successful career as a school inspector. His head quarters are at Sussex. His work is the encouragement of teaching nature study and agriculture in the schools, supervising school gardens, and pro-

visiting courses in training for school teachers, and carrying on a general campaign to stimulate public interest in the teaching of agriculture in the public schools. Through the Agricultural Instruction Act this phase of work is being encouraged in all the provinces of Canada, and we hope within a year or two to have a well-organized branch in every province. The most important element in carrying out any plan for the teaching of agriculture in the public schools is the equipment of the teachers. Special courses of instruction are provided at Normal Schools and in summer schools of science. In 1913, thirteen New Brunswick teachers attended the Rural Science School at Truro, N.S., the course of which opened on July 8. In 1914, Director Steeves conducted a summer rural science school for teachers at the Fisher Vocational School, Woodstock, N. B., from July 8 to August 5. Provision was made for ninety teachers and sixty-four were in attendance, representing the entire province. Instruction was provided in the following four subjects: (1) Plant life, (2) animal life, (3) soil and air, (4) farm mechanics (for men) and rural domestic science (for women).

A moderate allowance was made to every teacher in attendance to cover cost of transportation. The full course, for which "certificates" will be issued, covers two summer sessions and a course of reading during the intervening months. Director Steeves is an officer of the Provincial Department of Agriculture, recognized by and co-operating with the Department of Education.

In carrying out his work, the three following items are to be considered:—

No. 6. $1,500—Bulletins.
No. 7. $500—Teachers.
No. 8. $1,500—School gardens.

Up to September 1, 1914, $1,717.83 had been expended on bulletins. Thus, all of the 1913 grant has been used, and that for 1914-15 is now being drawn upon.

The following is a list of the bulletins issued under this grant:—

Opportunities in Poultry Culture in New Brunswick.
Fattening and Marketing Poultry, by Seth Jones.
Poultry House Construction.
The Baby Chick.
Bee-keeping, by H. B. Durost.
Field Crops and Soil Management, by R. Newton.
Powdery Scab of the Potato, by R. P. Graham.
School Gardens, Instructions to Teachers, by R. P. Steeves, M.A.
The Uses of Fruits in the Household, by Ethel Dunbrack.
Homes, by Hazel E. Winter.
A Little Talk with the Baby's Mother, by Mrs. Laura J. Winter.
Home Economies as applied to the Choice and Preparation of Food, by Jean B. Peacock.
Food and Diet, by Jean B. Peacock.

In connection with the training of teachers, $300 was required for extra instructors in the summer schools. In all, $1,686.09 had been expended up to September 1, 1914, thus accounting for the $500 of the 1913-14 grant and a portion of the 1914-15 grant for the same purpose. The allowance to teachers for expenses approximated $15 each.

The grant for school gardens was used in two ways: First, teachers qualified according to the Act are allowed bonuses of $10 to $25 each, the amount being based on the condition of their school gardens; and second, trustees are paid grants of $10 to $15 to assist in the purchase of seeds and equipment.

In April, 1914, the New Brunswick Legislature passed amendments to the Schools Act, providing for the appointment of a Director of Elementary Agricultural Education, the certificating of teachers, the payment of bonuses to teachers, and the general carrying on of the work with funds provided under the

Agricultural Instruction Act. It may be desirable here to quote the clause dealing with the Director, as it defines his powers and shows his relationship to the Government:—

> "(*h*) The Director of Elementary Agricultural Education shall be under the general control of the Minister of Agriculture; but in so far as his work relates to the public schools of the province, he shall act under the direction of the Chief Superintendent of Education, making such reports, from time to time, to the Deparment of Agriculture as the Minister may require; and for the purpose of assisting in the work referred to in this section he shall arrange for experiments and demonstrations, and shall supply charts, instruction sheets, bulletins, leaflets, crop competitions, seeds, and such other things as may be deemed desirable for rendering the said work effective in all its branches."

The Board of Education provided for the following grants:—

To Boards of Trustees—	
For each year for equipment and maintenance	$ 50 00
Every year thereafter	30 00
To Teachers—	
Holding of certificates of competency every year	$ 50 00
Those having taken one year at the summer rural science school	30 00

No. 10—Travelling Instructors, $14,200.

This vote, which is the largest of the series, covers the salaries and expenses of all the permanent provincial instructors in Agriculture. The following is the list for 1913–14:—

A. J. Turney	Horticulture.
R. P. Gorham	"
D. P. Flewelling	"
H. B. Durost	Fertilizers, Soils, Bee-keeping.
W. D. Ford	Live Stock.
Seth Jones	Poultry.
C. W. McDougall	Dairying.
L. C. D'Aigle	"
N. W. Eveleigh	"
Wm. McIntosh	Entomology.

In addition to the above, who are permanent employees of the department, the salaries and expenses of temporary instructors are charged to this vote.

These men carried on instruction and demonstration work in connection with their several branches. The following are some of the lines carried out: —

HORTICULURE.

(*a*) Three demonstration orchards were continued, records kept, and information published.

(*b*) Twenty-eight illustration orchards were supervised. These differ from the demonstration orchards in that the work is merely supervised, and the owners are instructed as to the best way of conducting them.

(*c*) During 1913 no less than 314 orchards were visited (230 a second time) and instruction and advice given to the owners. Farmers were visited, advised as to sites for planting, varieties to be planted, methods of planting, care and treatment of trees after planting. For instance in May, 1913, assistance and advice were given in the planting of twenty-five orchards.

(b) Orchard meetings and demonstrations were held. Pruning, grafting, and spraying were demonstrated practically to fruit growers in attendance.

(c) Short courses in fruit growing were held in various parts of the province. These consisted, usually, of two days each, when information was given as to orchard pests, selection of stock, care of orchards, practical demonstrations given in box and barrel packing, and competitions held in fruit judging.

(f) Preparation of bulletins on orchard work and fruit distribution.

FERTILIZERS, SOILS, AND BEE-KEEPING.

New Brunswick, for its farm population, is probably the largest user in Canada of special fertilizers, one of its main crops being potatoes, in the growing of which fertilizers are most important. The director of this branch is engaged in giving information to farmers as to soil cultivation, the use of fertilizers and the home-making of mixed artificial fertilizers.

LIVE STOCK.

This branch has been created only recently. The director is available for general instruction in all live-stock matters, and has assisted in his line in giving instruction at the short courses held during the year.

DAIRYING.

The dairy staff work may be summarized as follows:—

(a) Conducting dairy schools at Sussex and in Madawaska county.

(b) Instruction in dairying at all short courses.

(c) Conducting a campaign of instruction in the growing of alfalfa for the feeding of dairy cattle.

(d) Organization of the thirteen creameries of Madawaska county into one large central creamery.

(e) General instruction for the dairymen of all parts of the province through meetings, reports, and individual visits to farmers.

POULTRY.

The work carried on by this branch was as follows:—

(a) Conducting egg-laying contests.

(b) Establishing and supervising poultry fattening stations.

(c) Advising as to formation and conducting of egg-circles.

(d) Preparation of articles and bulletins as to economic handling of poultry and poultry products.

ENTOMOLOGY.

Mr. Wm. McIntosh, of the Natural History Museum, St. John, N.B., has carried on a campaign of instruction principally in regard to the Gypsy moth and the Brown-tail moth. He succeeded in interesting a large number of the school children of the province in this work, which is of vital importance to New Brunswick.

No. 11—Women's Institutes, $2,000.

This work began in New Brunswick in June, 1911, when two ladies were sent out to organize. As a result of their work, sixteen Women's Institutes were formed. These were increased to twenty-five in August, 1912. In the

fall of 1913, through the federal appropriation, the work was enlarged. Four instructors and organizers were sent throughout the province, and the number of branches was increased to forty-one. The work is in charge of Miss Hazel E. Winter, who was appointed supervisor in January, 1913. Assistance is given to the local branches, special instructors are provided, an annual convention is held, and a valuable report is published.

The following brief statement indicates the range of work:—

"September, 1913, at the Fredericton exhibition, four rooms, comprising model kitchen, dining-room, bed-room and ladies' rest-room, were provided for the Womens' Institutes. Demonstrations were given each day along nursing and cooking lines. Bulletins have been printed and distributed among the members on making homes attractive; valuable hints on nursing; uses of fruits in the household; children. To encourage the different branches to form a library of their own the department made a present of six books to each branch, and paid half the price on all books purchased by the different branches."

The Women's Institutes of New Brunswick are live organizations, and their influence is rapidly extending. The expenses are met entirely out of the federal grant. In 1913-14, $2,000 was appropriated for this work, and $3,000 has been set aside out of the 1914-15 grant. Up to September 1, the total expenditure was $2,810.61, thus accounting for all of the first year's appropriation.

No. 12—Domestic Science—$200.

Only $14.40 of this small vote had been used up to September 1, 1914, the demands for this not having been so large as at first anticipated.

No. 13—Training of Teachers in Domestic Science.—$200.

It had originally been proposed to assist some teachers in paying their expenses to Macdonald College, Que., or to the Macdonald Institute at Guelph, to equip themselves for teaching domestic science in New Brunswick. There was only one demand on this vote, and the expense so far has been only $22.20.

No. 14—Demonstration Trains.—$2,400.

A better-farming special had been run through the province in 1912 and had given so much satisfaction that it was decided to repeat this line of instruction in 1913. Accordingly, $2,400 was set apart for this work out of the federal grant. Two baggage cars were fitted and provided by the Canadian Pacific Railway Company; one car contained typical live stock for instruction—horses, beef and dairy cattle, poultry, swine, and sheep. The other car, material for instruction in pure seeds, weeds, insects, dairying, horticulture, poultry apparatus, fertilizers, and drainage work.

The instructors who accompanied the train were composed mainly of the travelling inspectors of the province (No. 10). These special coaches left Fredericton on the 16th of July and returned the 9th of August, 1913, having visited twenty-four places in all. As a rule, a 24-hour stop was made at a place, and farmers and their wives were given full opportunity to examine exhibits and to get instruction along many lines. The total expenditure was $3,360.06, thus accounting for the $2,400 grant. The balance has been met out of the $1,000 set aside in 1914-15 grant.

No. 15—Drainage and Soil Cultivation—$4,500.

The main item in this connection was the purchase of a ditching machine at a cost of $3,000, to be used for demonstration purposes. The method of conducting the demonstration is as follows:— The machine is delivered free at the farm where the demonstration is to be conducted; the department advertises the meeting or operation; the farmer pays the expenses of operating; not over ten acres to be ditched on any farm. The instruction consists in seeing how the work is done and the resulting improvement in crop production. In 1913, demonstrations were given at the Experimental Farm, Fredericton, the C.P.R. farm at Fredericton Junction, on two farms in Carleton county, and on five farms in Westmorland county. Up to the 26th of September, $6,529.02 in all had been expended on this work, thus accounting for the $4,500 of the 1913-14 grant and charging $2,029.02 to the 1914-15 grant.

The form of agreement with conditions will be found in *The Agricultural Gazette* for August 1914, pp. 659, 660.

No. 16—Apiculture.—$500.

The expenditure of $150.56 under this vote was used to pay the expenses of demonstrations in bee-keeping conducted at fall fairs throughout the province.

No. 17—Contingencies.—$509.93.

The official records of the province show that up to 26th of September, 1914, $443.43 had been used out of this vote for various purposes, including special stenographic work under the various lines of work.

The following is the statement of the expenditure of funds provided by the province for agricultural purposes for the years 1912 and 1913, as taken from the official records of the province:—

	1912.	1913.
	$ cts.	$ cts.
Department salaries	5,012 50	5,499 98
Travel expenses	891 60	999 70
Agricultural societies	13,985 31	16,000 00
Agricultural societies, extra interest		867 66
Butter and cheese factories	250 00	300 00
Dairying	4,490 74	3,792 28
Dairy school	492 80	537 03
Farmer's institute	2,921 61	1,048 96
Horticulture	5,494 17	4,155 67
Cold storage	750 00	750 00
Assistance to scholars	981 65	
Poultry raising	2,107 40	1,984 94
Stock Breeders' Association	800 00	800 00
Stock raising	680 16	150 45
Crop competitions, seed fairs	636 10	1,809 44
Miscellaneous expenses	443 32	309 59
Brown tail moth	1,988 93	999 51
Total	41,745 69	40,005 21

On inquiry it was found that some expenditure made in 1913 failed at the year to get into the accounts for that year. One account alone in connection with the dairy school amounted to $2,500. Including these, the expenditures for the year 1913 exceeded those of 1912. The expenses for Brown-tail Moth are not regular expenditures, as the cost depends largely on the distribution of the insects. This expenditure is therefore not controllable. The falling-off in "live stock" by over $500 is due to the fact that in 1910 and 1911 special importations of pure-bred stock were made, and the $500 was explained by clearing up purchases made the year before. Leaving out the accounts that failed to go through in 1913, it may be said that there was no reduction in the expenditures of 1913 as compared with 1912.

Further, the provincial appropriations for 1914 were $58,200, as against $49,300 for 1913. The New Brunswick year ends October 31, so that it does not correspond with that for which the federal grant is made. Comparing the expenditures of 1913 with those of 1912 and the appropriations of 1914 with those of 1913 it can be concluded that the grants under Agricultural Instruction Act were not used to curtail the regular expenditures of the province for agricultural work.

The following reference was made to this work in the Speech from the Throne in the session of 1913:—

> "Agricultural societies in most districts are doing well, meetings are more largely attended than heretofore, and the desire to adopt better methods is apparent on every hand. The grant received from the Federal Government for agricultural purposes has made it possible to prosecute the work of the Agricultural Department with more vigor than formerly. It is pleasing to note that an Act is now before Parliament to continue and increase the assistance given by the Federal Parliament to the several provinces to stimulate agriculture, and particularly agricultural education."

SECTION 5—QUEBEC.

The following is the statement of the federal grant to the province of Quebec, as set out in the agreement, with some slight variations agreed to by the minister as the work progressed.

1.	Fruit culture	$ 15,919 24
2.	Bacon industry	10,000 00
3.	Poultry keeping	17,000 00
4.	Schools of agriculture	59,850 00
5.	Agricultural instruction in academies, rural schools and normal schools	3,000 00
6.	District representatives	10,000 00
7.	Experimental union	2,000 00
8.	Demonstration work in connection with alfalfa and clover	4,039 32
9.	Seed selection and field crop demonstration	1,190 54
10.	Apiculture	5,000 00
11.	Tobacco industry	3,000 00
12.	Dairy industry	7,000 00
13.	Demonstration of underdraining	8,000 00
14.	Domestic science	7,000 00
15.	Maple sugar industry	4,090 00
16.	Lectures and special agricultural train	2,482 40
		$ 159,482 40

The agreement was dated July 24, 1913, and the total expenditures as reported in detail were as follows, at the dates stated: On December 31, 1913, $17,587.81; on June 30, 1914, $109,318.82; on October 31, 1914, $148,149.65; on November 30, 1914, $150,786.66.

The grants to Quebec were of a varied nature, covering all lines of agricultural work, and the expenditures were widely distributed over the province. A large number of teaching institutions were being assisted. It was considered desirable that, as work had to be inspected in many parts of the province, someone well acquainted with the various sections, familiar with the agricultural operations, and able to speak French should be appointed as inspector. Mr J. C. Chapais, of St. Denis, Kamouraska county, was appointed for this work, and his services appear to have been very acceptable to the people.

The following report has been prepared largely upon information furnished by Mr. Chapais, who made many visits to the schools at Oka and Ste-Anne-de-la-Pocatière, also the sugar schools, and kept in close personal touch with the work being carried on in so many places in the province.

No. 1.—Fruit Culture.—$15,919.24.

This work was carried out along three lines:—

(*a*) Experimental or demonstration orchards.

(*b*) Fruit experiment stations.

(*c*) Lectures and special instruction.

(*a*) Under Mr. Peter Reid, Secretary of the Quebec Pomological Society, experimental work was conducted in seven orchards leased from farmers' co-operative associations in the following places:—

St. Valier, Bellechasse county.
Ste. Anne-de-la-Pocatière, Kamouraska county.
St. Joseph du Lac, Two-Mountains county.
Abbotsford, Rouville county.
St. Hilaire, Rouville county.
Rougemont, Rouville county.
Covey Hill, Huntingdon county.

The first two are new orchards, and the work done was principally in connection with drainage and planting of selected varieties. The other five were old orchards, and the work was manuring, pruning, and spraying.

(*b*) Under the supervision of Mr. Auguste Dupuis, member of the Quebec Council of Agriculture, nurseryman, and director of the experimental stations, work was carried on in thirty-seven stations in the following counties:—

Arthabaska	Kamouraska,	Lake St. John,
Bagot,	L'Islet,	Nicolet,
Beauce,	Lotbiniere,	Portneuf,
Bellechasse,	Matane,	Quebec,
Bonaventure,	Maskinonge,	Rimouski,
Champlain,	Megantic,	Terrebonne,
Chicoutimi,	Montmagny,	Two-Mountains.
Dorchester,	Montmorency.	

These fruit experiment stations, which will be increased in number from year to year, are to demonstrate to the farmers of the various counties the best practice in orcharding- as to varieties, soil cultivation, treatment of trees, and handling of fruit.

(*c*) There are now fourteen horticultural and fruit-growing societies in Quebec. Mr. Solyme Roy, Chief Arboriculturist, assists these by instruction, as also does M. L'Abbe V. A. Huard, the Provincial Entomologist. One noticeable result has been the great extension of spraying. The department assists in the purchase of spray pumps out of provincial funds. A text book or manual on fruit culture was prepared by Rev. Father Leopold of the Oka Agricultural Institute, and was distributed free by the Provincial Department of Agriculture to those interested in fruit growing. A fruit division of the Quebec Department of Agriculture was organized, with Mr. J. H. Lavoie as chief. The duties of this division are to give practical information on the planting and management of orchards; to establish fruit experiment stations; to establish demonstration orchards; to help organize co-operative fruit growing societies, and to superintend the organization of fruit exhibitions. By the 31st of October, this grant had all been expended. A large portion of the money was expended on the purchase of nursery stock for the demonstration and experimental orchards and for the care and supervision of the same.

The cost of preparing the book on fruit culture also was met out of this grant, and salaries and travelling expenses were provided for the following officers:—

Rev. V. A. Huard, Provincial Entomologist.
Mr. J. H. Lavoie, Chief of Fruit Division.
Mr. Peter Reid, Superintendent of Demonstration Orchards.

The Agricultural Instruction Act, therefore, provided the following in connection with the fruit industry:—

(*a*) Establishment of a provincial fruit branch.
(*b*) Establishment of a provincial entomological office.
(*c*) Increased number of demonstration orchards and fruit experimental stations.
(*d*) Large extension of instruction in fruit growing.

Further details as to some of the work above referred to may be found in the report of the Department of Agriculture of Quebec for 1913.

A sketch of the work to be carried on by the new Quebec fruit division will be found in *The Agricultural Gazette* for September, 1914, pp. 732-3, by Mr. J. H. Lavoie, from which the following extract is made:—

> "The Honourable Minister of Agriculture has established a fruit division, the staff of which includes, as instructors, graduates of our best

agricultural colleges. Their duties are as follows: (1) to give practical information on the management of orchards by means of publications, circular letters, lectures or demonstrations; (2) to establish experimental fields, as fruit-growing stations, in the districts where no fruit is being grown, in order to introduce varieties best adapted to soil and climatic conditions; to establish demonstration orchards in districts where this industry has been going on, with more or less success; to organize all such experimental fields or stations and to put them under efficient direction and supervision; (3) to help in the formation of co-operative fruit-growing associations, to give them necessary information concerning their work, including grading, packing and canning fruit; [illegible] to superintend the organization of fruit exhibitions."

No. 2.—Bacon Industry.—$10,000.

With a view to encouraging the live-stock industry in Quebec, the department secured the services of a Danish expert in bacon production, Mr. A. Hansen, who makes his headquarters at the Oka Agricultural Institute. His bacon-curing demonstrations are carried on at the Institute, and also at the Agricultural School at Ste. Anne-de-la-Pocatière. Each of these institutions has an abattoir. Others will be erected if the marketing proves successful. The main difficulty lies in getting dealers to handle new brands. Mr. Alfred St. Pierre is his assistant. These officers attend meetings, advise as to feeding of swine, and give demonstrations at the two schools. They also prepare plans and give instruction in the construction of piggeries. Through their work a co-operative society has been organized at Mont Laurier, Labelle county. This grant is used mainly for the payment of salaries and expenses of these two permanent officers. Mr. Hansen is paid at the rate of $3,000 a year, and Mr. St. Pierre $900. The expenditure up to 31st October, 1914, was as follows:—

Professor Hansen, salary seven months	$	1,750 00
" expenses		222 52
A. C. St. Pierre, salary fourteen months		1,050 00
" expenses fourteen months		1,580 35
Abattoir at St. Valier, purchase of lot, and plans		305 28
2 pickle pumps for Oka and Ste. Anne-de-la-Pocatière		222 96
Miscellaneous		662 43
	$	[illegible]

No. 3—Poultry Work—$17,000.

The work in poultry demonstration was placed in charge of Rev. Brother Liguori, poultryman of the Oka Agricultural Institute, who was appointed also to be provincial superintendent of poultry keeping, or aviculture, as the industry is called in French, a salary for this work being provided for out of the grant.

Seventeen demonstrations were established in the counties of Beauce, Stanstead, Dorchester, L'Islet, Temiscouata, Lotbinière, Gaspé, Wolf, Arthabaska, Chambly, Brome, Kamouraska, Lévis, St. Hyacinthe, and Bellechasse. At each of these stations a flock was established at a model poultry house which was equipped with up-to-date appliances, and the work carried on along the best modern lines. A moderate salary was provided for the superintendent (régisseur). Mr. Leon Picard was appointed assistant to Brother Liguori. He is a graduate of the agricultural school at Grignon, France, and was for a number of years in charge of the farm of Mr. Menier on Anticosti island. In addition to the above stations, poultry fattening was carried on at all the teaching institutions in the province in connection with courses in domestic science, some forty in number. Four incubators, with capacity of 1,200 eggs each, were operated in different parts of the province.

A central collecting and selling agency was established at Montreal, and thereby a market established for guaranteed stamped eggs.

Bulletins on "Poultry Raising" and "Poultry Fattening" were prepared, printed, and widely distributed by the department. All of the above work was carried on through the federal grants. Thus it will be seen that the Act made provision for permanent officials as follows:—

Provincial Poultry Superintendent, Brother Liguori	$ 960 00
Asst. Provincial Poultry Superintendent, Leon Picard and four travelling instructors	1,200 00

An immense amount of demonstration and instruction work among the farmers and in teaching institutions was carried on in all parts of the province. Other items of expenditure were for bulletins and the expenses of demonstrations and exhibitions held at Sherbrooke and Quebec.

The following is a statement of the expenditure:—

Poultry department Oka Institute	$	3,298 11
Rev. Brother Liguori, salary and expenses		1,501 57
Leon Picard		642 40
J. G. Morgan, Montreal		1,303 93
Four Travelling instructors		667 63
Bulletins and printing		2,274 45
Macdonald College, egg distribution		250 00
Exhibitions, Quebec and Sherbrooke		906 86
Poultry demonstrations stations		7,442 85
Incubators (4)		964 00
Miscellaneous expenses		1,741 11
	$	16,992 91

No. 4—Agricultural Schools and Colleges—$59,850.

The distribution of this grant was as follows:—

1. Macdonald College	$	20,000
2. Oka Agricultural Institute		19,500
3. Agricultural School of Ste. Anne-de-la-Pocatière		19,250
4. Orphanage, Notre Dame des Champs at Paspebiac, Bonaventure		400
5. Agricultural Orphanage of St. Joseph at Vauvert, Lac St. Jean		700
	$	59,850

Apart from the two grants, amounting to $1,100, to assist in giving agricultural training to the pupils at the two last-named orphanages, it will be seen that the grant was about equally divided among the three schools or colleges, the first of which, Macdonald College, is affiliated with McGill University, and the other two with Laval University, Montreal and Quebec.

(1) Macdonald College—$20,000.

This institution, situated at Ste. Anne-de-Bellevue near Montreal, was erected equipped, and endowed by Sir William Macdonald, of Montreal, at a cost of approximately $7,000,000. It comprises three schools: the School of Agriculture, the School for Teachers, and the School of Household Science. The property includes 786 acres. A full sketch, written by Dr. F. C. Harrison, principal of the college, was printed in the *Agricultural Gazette* for July, 1914. It was established to give training in agriculture, more particularly for English-speaking students of Quebec. Its staff consisted of twenty-four persons. The $20,000 federal grant was used to add to the teaching staff and to provide for extension work.

The following appointments were made to the staff, and their status is thus clearly set out in the College Calendar:—

Employed under the Agricultural Instruction Act of 1913 (Canada).

P. A. Boving, Cand, Phil., Cand. Agr., in charge of Root-crop Investigation.
A. Savage, B.S.A., D.V.M., Veterinarian.
A. A. McMillan, B.S.A., in charge of Sheep Husbandry.
E. M. DuPorte, B.S.A., M.Sc., Assistant in Biology.
G. Fenoulhet, S.E.A.C., Dip., Assistant in Horticulture.
J. V. Dupre, A.C.G.L., Assistant in Physics.
N. C. McFarlane, B.A., Assistant in Chemistry.
Miss Frederica Campbell, Demonstrator to Homemakers' Clubs of Quebec.

In addition to paying the salaries of the above (or their predecessors), and expenses in connection with various lines of departmental work, the following were provided for:—

Exhibits throughout the province	$ 500
School for teachers, linking up of the rural schools, and demonstrator	1,500
Short courses throughout the province	1,000
Publications	700

Investigations were carried on in connection with soil, root crops, maple sugar manufacture, and the milk supply of Montreal, and valuable reports on these have been published and may be had on application to the college, whose address is Macdonald College, Quebec.

Demonstration work was carried on along the following lines: sheep breeding and feeding, orchard work, and poultry raising. Out of the publications grant the college issued an illustrated monthly bulletin for the boys' and girls' clubs in the province of Quebec.

The short courses, provided for above, were held as follows, January 6 to 24, 1914:—

Shawville, attendance		1,032	Cowansville, attendance		895
Lachute	"	1,783	Waterloo	"	875
Huntingdon	"	330	Cookshire	"	1,155

The courses were four in number, viz.: Live stock, field crops, farm homes, poultry. Twenty meetings in all were held.

A portion of the grant was used to assist in the work of the Macdonald district representatives or demonstrators, of whom the following is the list:

Macdonald College Demonstrators.

J. K. King, B.S.A.	Shawville, Que.
L. D. McClintock, B.S.A.	Cowansville, Que.
A. E. Raymond, B.S.A.	Cookshire, Que.
A. F. Emberley, B.S.A.	Lennoxville, Que.
R. E. Husk, B.S.A.	Huntingdon, Que.
C. H. Hodge, B.S.A.	Richmond, Que.

The following report by Principal Harrison gives some further information as to the work made possible and carried on through the federal grant of $20,000:—

"The men engaged are paid their entire salaries from those funds. They include P. A. Boving, on root crops; A. Savage, veterinarian;

A. A. McMillan, in charge of sheep husbandry; E. M. Duporte, assistant in biology; G. Fenoulhet, assistant in horticulture; J. V. Dupré, assistant in physics; N. C. McFarlane, assistant in chemistry; Miss Frederica Campbell, demonstrator to Homemakers' Clubs of Quebec; J. E. McQuat, agricultural instructor in public schools. All of these, in addition to extension work, deliver lectures and do other college work. Mr. Boving travels from place to place in the province, giving instruction in root culture. Mr. Savage does class-room work. A. A. McMillan visits sheep raisers, explaining proper methods of shearing, dipping, and other operations, and has taken an active part in organizing wool clubs, for example at Shawville, Pontiac county, Quebec. Mr. Fenoulhet devotes attention to market gardening, including the testing of seeds, plant production, etc., at Macdonald College. Mr. Dupré gives special attention to soil physics, and assists Professor Lougheed in insect and weed survey work. Mr. McFarlane has been doing some special work, under Dr. Snell, with maple sugar. Dr. Harrison has been carrying on bacteriology work in connection with Montreal milk supply. His report will be published in due time. Miss Campbell links up homemakers' Clubs with the school of household science. Fifteen or sixteen clubs have been formed. In connection with her work, travelling libraries are used; they consist of general and household science literature. The books travel in suitable cases, and are left with the club for a reasonable length of time. A member of a club may retain a book for one week.

"A demonstration poultry house for one hundred birds is operated under the direction of each district representative. This work is carried on by Professor Jull. Poultry clubs for children are organized; also corn and potato clubs. Members of these clubs are provided with Barred Rock eggs, corn and potato seed, respectively, and are required to exhibit their produce at the autumn school fair. A monthly bulletin issued at the college is distributed to the members of these several clubs.

"Professor Lynde trains drainage experts, of which there are four working, making surveys in different English-speaking parts of the province. These men send in their rough sketches to the college, where survey maps are made. One man is kept constantly employed making these maps. Drainage experts, both for English and French sections, receive their training from the college."

(2) The Agricultural Institute of Oka—$19,500.

First of all, the institute needed increased accommodation and an enlargement of the college. It was planned that $40,000 would erect a new residence (pensionnat), and that $10,000 would provide for the improvement of the former college building in class-rooms, museums, and laboratories. Arrangements were made with the Provincial Government to allow the institute $5,000 a year for ten years out of the federal grants.

In the next place, provision was made for additions to the teaching staff of three professors and three assistant professors. The salaries of these professors and salaries of two other officers of the institute took up $6,600.

In the previous year the Institute had received $4,500 from the Agricultural Aid Act, which had been used in the appointment of four additional professors to the staff. These were continued, and their salaries provided for in part under the Agricultural Instruction Act, amounting to $3,260. Apart from $1,800 used to supplement the provincial grant for board of students, and the $5,000 on capital expenditure mentioned above, practically the entire amount of the grant was used for paying the salaries of members of the staff. It should be

mentioned that the Oka Institute participates also in several of the other grants. It is the headquarters for some provincial lines of work. The experimental union works from Oka. Demonstrations along various lines are carried on at Oka, as elsewhere. Prof. Anders Hansen is on the staff (see Bacon item). The $19,500 handed over to it by the provincial department, represents only a portion of the benefit accruing to this institution from the Agricultural Instruction Act.

An interesting sketch of this institute was published in *The Agricultural Gazette* for November, 1914, and its detailed report from year to year appears in the report of the Minister of Agriculture for Quebec. The references herein are only the work carried on under the federal grant.

A four-years' course has been inaugurated at Oka. For 1913–14, only three years, however, were in operation, and the attendance was as follows: First year, 47; second year, 11; third year, 7; total, 65.

Through the providing of federal money for instruction, the following persons have been added to the staff of the Oka Agricultural Institute:—

Prof. N. Walch, Doctor of Sciences of the University of Geneva, Switzerland—teacher of chemistry, bacteriology, physics, and meteorology.

Prof. H. Nagant, Agricultural and Forestry Engineer from the University of Louvain, Belgium.

Prof. Anders Hansen, Swine Breeding and Bacon Production, graduate of the Royal Institute of Agriculture, Copenhagen, Denmark.

Prof. M. N. Savoie, B.S.A., teacher of tile drainage.

A six-page article on the Oka Agricultural Institute, by the Secretary, Brother Liguori, appeared in *The Agricultural Gazette* for November, 1914, from which some notes in reference to the Institute may be quoted.

The school, which belongs to the reverend Trappist Fathers, is located on the lake of Two Mountains, about 30 miles from Montreal. The post office is "La Trappe." The property consists of about 2,000 acres, one-half of which is untilled, consisting of sandy beach and forest-clad hills. The live stock consists of the following: 100 cows, mostly Canadian and Ayrshire; 250 pigs, Yorkshire, Berkshire, and Tamworth; 100 Shropshire sheep; 30 horses, mostly Percheron. There is an apiary of 100 hives; and a poultry department, producing yearly 3,000 to 5,000 chicks and 1,000 ducklings.

The main building accommodates seventy-five students, but the new building will more than double the accommodation. The following are included in the plant: cheese factory, creamery, cider cellar, blacksmith shop, saw-mill, joiner shop, soap-making shop, bakery, shoemaking and harness shop.

The orchard and nursery cover 44 acres. Alfalfa has been grown for over thirty years, and the field now is from 30 to 40 acres in extent.

In the fall of 1914, 148 new students applied for admission, but only 47 could be admitted, for lack of room.

Hitherto the course has been three years; this year it has been extended to four years, leading to the degree of B.S.A. (bachelor of the science of agriculture) to be conferred by Laval University (Montreal).

	1911–12.	1912–13.	1913–14.	1914–15.
[illegible]	[illegible]	64	7	[illegible]
[illegible]	[illegible]	[illegible]	11	[illegible]
[illegible]	[illegible]	9	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Total	[illegible]	89	65	[illegible]

(3) The Agricultural School of Ste. Anne-de-la-Pocatière —$19,250.

This school of agriculture, situated in Kamouraska county, is the oldest institution of its kind in Canada, in fact one of the pioneer schools of North America. It was established in 1859. The federal grant of $19,250 was expended along the following lines:—

Enlargement of college buildings	$ 5,000 00
Towards expenses of students	1,200 00
Salaries of instructors	2,800 00
Demonstration plots	1,800 00
Dairy branch	1,300 00
Poultry	500 00
Bee-Keeping	450 00
Clover instruction	1,500 00
Arboriculture	1,000 00
Cold storage	1,200 00
Bacon industry	1,000 00
Drainage	450 00
Miscellaneous	1,050 00
	$19,250 00

The original college building of 1859 served its purpose until 1910, when it was replaced by a larger building. The new life made possible by federal grants beginning in 1912 necessitated more accommodation for students and instructors. The $5,000 in the above statement was used in the enlargement of the college building. An arrangement similar to that at Oka was entered into, whereby the provincial department sets apart for capital expenditure out of the federal grant $5,000 a year for ten years.

It has been the practice of the Provincial Department of Agriculture to make a monthly allowance towards the expense of all Quebec students who attend the three agricultural colleges or schools. As we have stated, $1,800 of federal grant was used for this purpose at the Oka Institute. At Ste. Anne-de-la-Pocatière it amounted to $1,200. The province allows $7 a month to each student, and this is supplemented at each institution by $2 out of the federal grant.

The following salaries are provided for:—

P. Boulet, Assistant chef de Pratique	$ 500
L'Abbe A. Letourneau, Regent	400
L. D. Huguenin, Jardinier	400
N. Savoie, Drainage & Seed Selection	1,000
A. Jalbert, Arboriculteur	500
	$ 2,800

The school provides a three-year's course of instruction, and is affiliated with Laval University, (Quebec) which confers the degree of B.S.A.—bachelor of the science of agriculture. The enrolment in the regular course, 1913-14, was as follows: 1st year, 49; 2nd year, 19; 3rd year, 9; total, 77. In addition special students attended short courses held at the college. During the winter of 1913-14, L'Abbe Bois conducted short courses in Beauce, Lotbiniere, and Portneuf counties. The regular enrolment at the college in 1912-13 was 42, 20, and 9—a total of 71.

Detailed reports of the work done at this school are printed in the annual report of the Provincial Department of Agriculture. An account of the institution (illustrated), written by Rev. Abbe Olivier Martin, appeared in *The Agricultural Gazette* for October, 1914. Rev. Abbe Martin, who was director of the school, has recently been appointed Superintendent of School Gardens for Quebec under the Provincial Department of Agriculture.

No. 5—Agricultural Instruction in Academies, Etc.—$3,000.

During the summer of 1913 school gardens were in existence at 234 schools in 53 counties, and 7,740 pupils received small rewards through the Provincial Department of Agriculture for their work in these gardens. Mr. Delaire, of St. Hyacinthe, had a general supervision of the work. In September, 1913, the Minister of Agriculture called a meeting at Quebec of principals of Normal Schools and of superiors of Domestic Science Schools, and others interested, to confer on this matter. Mr. Chapais attended as Dominion representative. It was decided to introduce the teaching of agriculture at the Normal Schools. At every Normal School there would be a small experimental or demonstration station consisting of a school garden, an orchard, a poultry house, an apiary, and a dairy stable with two cows. By means of these, some practical instruction could be given in horticulture, fruit growing, poultry, bee-keeping, and the sanitary production of milk. At a further meeting in October, a sub-committee of the Council of Agriculture, of which Mr. Chapais was appointed a member, it was decided that school gardens should be established in all rural schools under the auspices of the Council of Agriculture and the Provincial Department of Agriculture.

During the year, lecturers were sent to many academies and schools to deliver addresses on agriculture, and three priests of the diocese of Quebec, Revs. P. Groulin, Adolphe Michaud, and Olivier Martin were appointed to deliver agricultural lectures in Normal Schools, at Farmers' Clubs, and at Schools on Domestic Science. The inspectors of public schools and district representatives also co-operated in this work; $300 was expended in the purchase of charts illustrating agricultural subjects, for hanging on the walls of schools. Up to 31st October, 1914, $2,978.80 had been expended, nearly all of which sum was for the teaching expenses of the persons referred to above.

Expenditure.

Travelling expenses of school inspectors	$	975 40
O. E. Delaire, expenses		100 00
Rev. A. Michaud, salary and expenses		569 30
Rev. Abbe O. Martin, salary and expenses		128 08
Charts, bulletins, etc		615 42
Miscellaneous		590 80
	$	2,978 80

No. 6.—District Representative.—$10,000.

At the September conference held at Quebec, referred to above, it was recommended that district representatives should be located in every county as rapidly as suitable men were available. It was decided that these men should be graduates of the three schools, Macdonald College, Oka Institute, or the School of Ste. Anne-de-la-Pocatière. In 1913, five were appointed and one more in 1914. They are as follows:—

Rouville and Sherville, Henri Cloutier, B.S.A. (Oka Institute)
Portneuf and Champlain, J.C. Magnan, B.S.A. (Oka Institute).

Bellechasse and Dorchester, Abel Raymond, B.S.A. (Oka Institute).
Bagot and Drummond, R. A. Rousseau, B.S.A. (Oka Institute).
Montmorency and Quebec, Alphonse Roy, B.S.A. (Oka Institute).
Abitibi, J. M. Ledaire, B.S.A., Macdonald College.

In this connection it might be stated that Macdonald College undertakes to provide district representatives in the English speaking districts.

These departmental officers, who are permanently located in the above counties, address farmers' meetings, organize school gardens, give demonstrations in drainage, orchard care, packing of fruit, bee-keeping, poultry, and along other lines. Individual farmers are visited and advised as to their work. Excursions are arranged for the agricultural institute or college. Correspondence is attended to. Bulletins and circulars are distributed. The district representatives promote all lines of agricultural work and keep the individual farmers in touch with the colleges and the Provincial Departments of Agriculture. One district representative reports having made 1,000 visits to farmers' homes, written 792 letters, and supervised fifty-four demonstrations.

Another reports to Mr. Chapais that he has been instrumental in arranging for practical instruction in agriculture at the college of the Christian Brothers of St. Casimir.

The salaries paid are $800 a year at first; increased to $850 the second year. Up to 31st of October, 1914, $8,837.80 had been expended, which covered salaries, travelling expenses, office equipment, and maintenance.

No. 7.—Experimental Union.—$2,000.

This organization, which is intended to promote experimental work by the farmers of the province, to carry out on their farms work in co-operation with the experiments of the colleges, has its headquarters at the Oka Institute. Mr. G. Reynaud, of Acton Vale, is president, and Rev. Brother Liguori, of Oka, is secretary. In addition to distributing seeds and plants among its members for testing, it maintains a small experimental farm called the Metairie Laval at the Laval Normal School at Quebec. The union aims at introducing new and improved seeds and plants and encouraging the farmers in the best methods of agriculture.

No. 8.—Alfalfa and Clover Demonstrations.—$4,039.32.

In 1912 the provincial department used some of the federal grant under *The Agricultural Aid Act* to assist farmers in various districts to purchase clover-threshing machines. Twenty-five were purchased, the department paying one-half of the cost. Under *The Agricultural Instruction Act*, the method of assisting in the growing of clover and alfalfa was changed to meet the requirements of the new Act. Twenty plots of about 1 acre each were selected, fertilizers and seeds were supplied, and instructions given as to the sowing and care of the plots. An instructor visited every demonstration plot two or three times a year. In the fall or winter a thresher owned by the department is taken to the farm and the seed is threshed. The owner of the farm is allowed $20 to $35 for extra services in managing the plot. The demonstration plots were located in the following counties: Arthabaska, Bonaventure, Champlain, Kamouraska, Lake St. John, Laval, L'Islet, Montmorency, Portneuf. The object is to encourage the more general growing of clover and alfalfa. A few years ago all the clover seed sown in the province was imported, now much is exported.

Up to 31st of October, 1914, $3,157.53 had been expended, mainly along these lines: purchase of seed, allowances to growers for maintenance of plots, salaries, and expenses of instructors.

No. 9.—Seed Selection and Field Crop Demonstrations.—$1,190.54

Out of this item, only $691.70 had been expended up to 31st of October, 1914. The principal charge was $297 for a Crible separator, purchased for demonstration purposes. The only work reported along the line of cleaning seed, so far, has been by the co-operative society of Rimouski county. A competition in the growing of crops for the production of improved seed has been initiated.

No. 10.—Beekeeping.—$5,000.

Ten apiary instructors were engaged, who hold meetings to increase interest in bee-keeping and to give instruction in the best methods. They inspected apiaries and showed how to get rid of foul-brood. Apart from $150, to cover cost of exhibits at Sherbrooke and Quebec, all the grant was expended by September 30, 1913, to pay the salaries and expenses of the inspectors or instructors.

The following is the complete statement:—

L. J. Comiré, Yamaska West, Yamaska	$	917 34
J. H. Comiré, Montreal		297 50
L. J. A. Dupuis, village des Aulnaies, L'Islet		698 35
D. Rochefort, Becancour, Nicolet		192 50
Elz. Girard, St. Monigue, Nicolet		516 50
P. A. Dupuis, Village des Aulnaies, L'Islet		312 90
O. Comiré, St. Francois du Lac, Yamaska		209 90
Hector Beland, Louiseville, Maskinongé		996 26
L. F. Beland, Grand Pré, Maskinongé		334 75
Edm. Brissette, St. Barthelemi, Berthier		364 00
Exhibitions		150 00
	$	5,000 00

No.—Tobacco.—$3,000.

The demonstration station was at Saint-Cesaire, Rouville county, where there is a co-operative socity of tobacco growers. Experiments were carried on in the cultivation of tobacco under protection. Mr. Joseph Gagné delivered lectures to farmers on the cultivation of the crop, and a bulletin was prepared and distributed free among farmers by the provincial department. To encourage the marketing, exhibits of the Quebec product were made at the exhibitions held at Toronto and Winnipeg.

Statement of expenditures to October 31, 1914, was as follows:—

Exhibition expenses	$	502 36
Bulletins, "La Culture du Tabac"		2,000 00
Jos. Gagne, salary, May, June, July, 1914		225 00
Other expenses		218 95
Total	$	2,946 31

No. 12.—Dairying.—$7,000.

In 1912, a law was enacted that managers of dairy factories must thereafter hold a diploma of qualification from the Dairy School at St. Hyacinthe. During the winter of 1913-14, courses were put on at the school and special instructors appointed. In addition to these courses, dairy meetings were held at various

points in the province, and lectures provided on matters relating to the dairy industry. The above expenses were met out of the federal grant, as were also the salaries of additional instructors and inspectors. Up to 31st October, 1914, $6,994.17 had been expended, but by far the larger portion was expended on thirteen new instructors during the months of September and October, 1913. Formerly the syndicates appointed the inspectors and the department paid one-half of the cost. Now the department appoints and pays for the same in full, thereby fully controlling the work.

No. 13—Underdrainage—$8,000.

The object of this grant was to demonstrate the benefits of underdraining soils, and to encourage farmers to do so. A bulletin on "Practical Draining" was prepared and distributed free by the provincial department; 10,000 copies were printed and charged to the federal grant ($607.07).

In 1912 two ditching machines had been purchased. Under the Agricultural Instruction Act, arrangements were made for ditching 5 acres on a farm as a demonstration, the operation of the machine being paid out of this grant. Plans or surveys were prepared by students of Macdonald College and the agricultural school at Ste Anne-de-la-Pocatière, under the general supervision of Dr. C. J. Lynde, Professor of Physics at Macdonald College.

The demonstration work was done as follows:—

In 1913—

L'islet, (L'Islet county) J. Arthur Talbot's farm.
Cap Rouge, (Quebec county) Dominion Experimental Farm.
Quebec, at Quebec Exhibition Grounds, during exhibition.
Saint Césaire (Rouville county) on farms of Napoleon Ouimet, J. B. Saurette, Adelard Saltry, Dosyloe Leduc.
Marieville (Rouville county) Hubert Hubert's farm.

In 1914—

St. Bruno (Chambly county) Jesuit Fathers' farm.
Shawville (Pontiac county) on farms of Jos. Bromby, Alex. Smart, T. Smeeby, Andrew Sly, W. H. Barr, W. Hossefield, and John Smaly.
L'Ancienne Lorette (Quebec county) on farms of Onesime Paquet and Pierre Beaumont.
Ste-Anne de-la-Pocatière (Kamouraska county) on the farm of the agricultural school.

In addition to, and following up these, demonstration surveys for drainage were made and plans prepared free for farmers on application as far as the work could be carried out.

Under Dr. Lynde, four Macdonald College students and five from Ste-Anne-de-la-Pocatière worked on these surveys for five months, May to September. They received $50 a month and travelling expenses. The total expenditure up to 31st October, 1914, was $6,756.33.

No. 14—Domestic Science—$7,000.

There are, in the province, five schools of domestic science, at Roberval, Macdonald College, Saint Pascal, Sutton and Montreal. That at Roberval has been in existence for twenty-two years. Besides these larger special schools, forty-five convents and schools situated in thirty-two counties provide special courses in domestic science. During the summer vacation, courses for teachers are open at St. Pascal and Roberval. At these summer courses, diplomas are granted authorizing the recipients to teach the subject in educational institutions.

Grants of $300 were made to twenty schools besides $500 for the summer courses at Roberval and St. Pascal. The following schools (écoles ménagères) received subventions: Ste. Marie Beauce (1912-13), Chicoutimi, Bonaventure (1912-13), St. Francois du Lac, Victoriaville, St. Gervais (Bellechasse), Drummondville, Grande Rivière, Mont Joli, Havre-aux-Maisons, Ste. Marie Beauce, St. Georges, Beauce, Chicoutimi, St. Isidore Dorchester, Ste-Anne-des-Monts (L'Islet), St. Louis (Lotbinière), Charlesbourg, Academie St. Louis (Quebec) Marieville (1912-13).

The total expenditure up to 31st of October, 1914, was $6,968.48.

No. 15—Maple Sugar—$4,000.90.

Through this grant, three maple sugar schools were established in Quebec in the winter and spring of 1914, at Beauceville (Beauce county), Sainte Louise (L'Islet county) and La Minerve (Labelle county). The superintendents of these schools for teaching methods of making maple syrup and maple sugar were as follows: Alexandre Boldue, Beauceville; L. J. A. Dupuis, Village des Aulnaies; and Dr. J. H. Lefebvre, Waterloo.

The following table will show the scope of the work:—

	Beauceville, Beauce.	Ste. Louise, L'Islet.	LaMinerve, Labelle.
Number of trees	3,000	5,000	3,100
Regular students	5	5	7
Visitors	1,132	368	73
Products			
Syrup, gallons	512	335	345
Sugar, pounds		145	410
Sugar wax, pounds		60	

Lectures on sugar making were given in various parts of the province. The following is the statement of expenditures:—

Beauceville school	$ 1,772 75
St. Louise school	1,635 10
La Minerve school	548 05
Miscellaneous	45 00
Total	$ 4,000 90

No. 16—Lectures and Demonstration Train—$2,482.40.

In August and September, 1913, the Provincial Department of Agriculture, in co-operation with the Canadian Pacific Railway, arranged for a special demonstration train to go through the province to illustrate better methods of farming, and to supply information in a practical manner. The C.P.R. company offered the cars and transportation free. Two cars were filled with exhibits. These exhibits were provided by and installed by the Macdonald Agricultural College. They consisted of typical live stock, farm machinery, and high-class agricultural products. Professors from the three agricultural colleges, and experts from the provincial department accompanied the train and gave instruction. The expenses of preparing and running this demonstration train were paid out of the federal grant. Stops were made at thirty-nine points, as arranged by schedule, and instruction given in dairying, ensilage, poultry, tobacco growing, roadmaking, live stock feeding, etc.

Provincial Expenditures. The Provincial Minister of Agriculture, Hon. J. E. Caron, in his report for 1913, p. xx., makes this statement:—

> "Since 1901-02 the sums expended for agriculture have risen from $217,358.69 to $436,133.61. To these credits must be added those voted by the Federal Parliament to encourage agriculture in the provinces."

The total provincial expenditure in 1911-12 was $426,057.54. The following statements for 1912-13 and 1913-14 show that the provincial expenditures for agriculture have not been curtailed. The federal funds have been used for creating new offices., initiating new lines of instruction, and giving substantial assistance to the agricultural schools and colleges.

Statement of expenditures for agricultural purposes by Quebec Department of Agriculture, provincial funds. The financial year ends on June 30:—

	1912-13	1913-14
	$ cts.	$ cts.
Agricultural societies	120,614 08	164,551 98
Exhibitions	22,000 00	32,000 00
Agricultural schools and colleges	20,208 39	18,754 99
Agricultural school, Ste. Anne-de-la-Pocatière, maintenance	10,000 00	10,000 00
Agricultural school, Ste. Anne-de-la-Pocatière, buildings	10,000 00	...
Veterinary instruction	5,994 95	5,000 00
Housekeeping schools	10,000 00	18,500 00
Farmers' clubs	90,851 83	90,850 00
Journal of Agriculture	29,000 00	24,000 00
Council of Agriculture	4,529 03	3,685 83
Dairying—		
Grants to syndicates and inspection	31,000 00	32,000 00
Dairy school, St. Hyacinthe	8,991 56	10,000 00
Dairy Association	1,951 82	2,000 00
General work of encouragement	32,498 12	32,000 00
Poultry raising	3,000 00	3,000 00
Cultivation of fruit trees	11,876 29	10,865 48
Lectures on agriculture	6,537 56	7,029 44
Provincial agricultural merit	4,000 00	2,607 65
Official laboratory	2,000 00	1,540 24
Agricultural and Horticultural Society	500 00	500 00
Pomological Society	500 00	500 00
Arbor day	100 00	100 00
Total	436,133 64	483,545 61

SECTION 6.—ONTARIO.

The following is the statement of appropriation for the province of Ontario for 1913–14. In the original agreement there was a grant of $5,000 for additional land for the Ontario Veterinary College. This was, by agreement with the minister, cut out and added to item No. 5, buildings at Ontario Agricultural College. Item No. 14 was increased by $360, this sum being deducted from No. 8. The statement also shows the amounts expended under these same appropriations up to October 31, 1914, which is the closing day of the financial year of the province:—

		Appropriation.	Expended to Oct. 31, 1914.
		$ cts.	$ cts.
1	District representatives	80,000 00	80,000 00
2	O. A. C. short course, travelling and living expenses of winners of Acre Profit Competition	1,500 00	739 15
3	To encourage agriculture in the public schools, to be available for grants and for travelling and living expenses of teachers in attendance at short courses or other educational gatherings, in addition to services expenses and equipment, and to be paid out on recommendation of the Department of Education	10,000 00	10,000 00
4	Educational work in connection with marketing of farm products, including organization of co-operative societies, collection, printing, and distribution of information on current prices and systems of marketing	5,500 00	3,436 77
5	Buildings at Ontario Agricultural College	56,500 00	56,476 61
	Poultry building for administration class-room and laboratory $30,000		
	To finish and equip Field Husbandry building 21,000		
	To remodel and equip Bacteriological department 2,500		
	Extensions and equipment Dairy barn 3,000		
	$56,500		
6	Stock and seed judging short courses and institute lecture work	7,500 00	7,500 00
7	Women's Institute work, including courses in cooking, sewing, etc	6,500 00	3,887 23
8	Short courses for fall fairs and field crop judges, including travelling and living expenses	5,140 00	5,140 00
9	Drainage work	5,000 00	5,000 00
10	Demonstrations and instruction in vegetable growing	2,500 00	2,500 00
11	Demonstration work on soils	2,500 00	2,500 00
12	Demonstration and instruction on live stock and poultry	4,000 00	2,587 20
13	Demonstration in spraying, pruning and packing fruits	3,000 00	3,000 00
14	Demonstration in bee-keeping	1,360 00	1,360 00
15	Lectures on horticulture	500 00	475 65
16	Miscellaneous	4,233 32	1,652 91
	Total	195,733 32	

No. 1—District Representatives—$80,000.

The District or County Representative work began in Ontario in 1907. It was based on a memorandum which the writer of this report presented to the Provincial Minister of Agriculture in 1906, and which will be found in full in the report of the Ontario Experimental Union for 1907.

> "The ideal organization of the department will be to have a specialist —an agent, a trained agriculturist in every county or district of the province, paid by the department, and whose entire services will be at the

disposal of the department for the benefit of that county or district. This local representative would be the moving or directing spirit of every agricultural organization, assisting the farmers, directing special movements for improvement, inspecting, instructing, advising, reporting the appearance of any new pest or disease, procuring information in regard to all questions that farmers would ask, keeping the farmers informed as to all agricultural conditions, and be the direct link between the farmers, the agricultural college, and the department."

The Superintendent of Education at the same time recommended the establishing of courses of agriculture in high schools, to be carried on by agricultural college graduates. The result of these recommendations was that the two departments co-operated, and six graduates in 1907 were located in six counties to teach agriculture to any high-school students available and desiring such teaching, and also to carry on the departmental work referred to above. There were few if any pupils at the high schools having farming in view. As a consequence, the high-school teaching gradually dropped off, and the time of the specialists was given to instructing and advising the farmers and the carrying on of short courses at various points in the county.

The Department of Education paid the salaries ($1,200 at first, increasing to $1,500), the Department of Agriculture paid all the other expenses (office, travelling, equipment, etc.) and the county was required by statute to provide $500 every year.

The following table illustrates the growth of this work and is fair proof of its efficiency:—

	1907.	1911.	1912–13.	1913–14
Number of counties served..	6	20	31	37
Appropriation provincial	$ 6,000	$ 44,400	$ 65,800	$ 76,800
" federal			22,500	30,000

. It will be seen that a decided enlargement of the work took place in 1912, when the federal grant became available, the number of counties served was increased, more assistants were engaged and, in addition, some temporary offices were opened. An interesting account of the scope of the work carried on and benefits resulting was published in *The Agricultural Gazette* for May, 1914, pp. 382–5. It was written by Mr. C. F. Bailey, Assistant Deputy Minister of Agriculture for Ontario, who has the general supervision of this now extensive branch of work.

The above appropriations, provincial and federal, for 1912 and 1913 are not for exactly the same period, those from the province are for the year ending October 31, while those from the federal grant are for the year ending March 31. Adding the two together it will be seen that the average cost, per county, approximates $4,000.. This includes salaries of the district representative, his assistants, stenographers, office, travelling, and a great variety of miscellaneous expenses.

Other provinces are gradually adopting this method of instruction, modifying it to suit their conditions and requirements. Thus, in the province of Quebec, as we have seen, the Provincial Department of Agriculture has undertaken to locate district representatives in French-speaking counties, and Macdonald College is looking after the English-speaking sections. There were 12 in all in 1913–14.

In the spring of 1914 three more counties were provided with permanent officials, so that on the 1st of November, 1914, there were forty district representatives, having thirty assistants. More assistants would be appointed if they were available. In every case the district representative is a graduate of the Ontario Agricultural College, holding the degree of B.S.A. As a rule, the assistants are men who have completed their second or third year at the college, and who take up the work as assistant for a year or two and then return to the college to complete their course, when they are fitted to take the position of representative in charge of a county or a district. The cost per county averages about $4,000 a year. It will thus be seen that, through the Agricultural Instruction Act, twenty counties in Ontario were provided for.

Mention may be made of a line of work carried on by the district representative that is rapidly growing and is already assuming large proportions. It is beginning to play a very important part in rural education, and is stimulating many lines of instruction, namely rural school fairs. In 1914 these children's fairs were held in thirty-seven counties, and the following is a summary of the results, giving a comparison with the year 1913:—

	1914	1913
Number of fairs held	148	69
Number of schools included	1,391	531
Number of settings of eggs given out	4,074	.....
Number of plots	23,872	.....
Number of entries at fairs	75,602	18,652
Number of persons attending fairs	95,310	33,375

This work is growing so rapidly and becoming so important that an extract from the report of Mr. C. F. Bailey, Assistant Deputy Minister, will be of interest:—

"As in previous years, the children were supplied with seed material and given printed instructions for planting and cultivation. The varieties varied somewhat, depending on the locality in which the school fair was held, but in every instance only first-class seed was used, and a special effort was made to introduce new varieties that were recognized as the most suitable. O.A.C. 72 oats, recently originated at Guelph College, was distributed very largely over the whole province. The poultry section of the school fairs has become a very attractive feature with both the boys and the girls. With the exception of a few centres where other varieties of poultry predominate, the department has endeavoured to introduce the bred-to-lay Barred Rocks, originated at Guelph College. This year over 48,000 eggs of this strain were supplied, and at several of the fairs as many as 400 birds were on exhibit.

"There are to be found at every school fair, exhibits of grains, roots, vegetables, which must be produced from the seed supplied, and grown under the direction of the district representative; also poultry produced from the eggs supplied by the department; insect and weed collections; handy home devices; cooking and sewing exhibits, and essays. The children are also encouraged to exhibit calves and colts, but more emphasis is put upon the control the boy or the girl has over the animal than upon the confirmation or quality. Each animal must be shown on the halter and exhibited by the child. The manner in which some of the children perform with these young animals shows striking evidence of the value of this feature. A novel feature introduced at a number of fairs this year was a chicken-plucking contest, which tested the childrens' skill in this line, and also proved very spectacular. A very interesting feature, and one of undoubted value to those taking part, was the public-speaking contest held at several of the fairs. Wherever a contest of this sort was

held there was little difficulty in securing entries, and the children acquitted themselves admirably. This feature might well have a place in the prize list of every school fair.

"Not the least important feature of the school fair movement is the inspection of the children's plots during the growing season. As a special inducement for the children to follow the instructions of the department, prizes are awarded for the best kept plots.

"This inspection enables the district representative to keep closely in touch with each child's work, and to render timely assistance with regard to cultivation and combatting insect pests and plant diseases. This inspection also affords the district representative a splendid opportunity of getting the parents interested in new methods. The extent of this part of the work will be seen from the fact that nearly 24,000 children's plots were inspected during the summer of 1914.

"Up to the present time the rural school fairs have depended entirely upon local funds for prize money. Counties and townships alike have made liberal contributions. Each school board is asked to make a grant of from $3 to $5; women's institutes, farmer's clubs, and private individuals have also assisted in a very liberal manner. All other expenses are met by the Department of Agriculture. With one exception, no important changes have been made during the past year in the organization and method of conducting the fairs.

"The department has endeavoured to have the children look upon the school fair as a children's organization, and have therefore decided to hold school fairs separate and distinct from township or county agricultural fairs. Where they have been held previously in conjunction with other fairs, the children's exhibits have undoubtedly attracted a great deal of attention, but the interest maintained by the children is not to be compared with a school fair where the children are made to feel that they are responsible for the successful carrying out of the fair (under direction of the district representative).

"A report of the school fair work in Ontario would not be complete without making reference to the hearty and splendid co-operation of not only the children themselves but also the parents, school trustees, inspectors, and teachers."

No. 2. Short Courses and Acre Competitions.—$1,500.

The following report on the instruction provided through this grant has been furnished by the Deputy Minister, Mr. W. B. Roadhouse:—

"Of competitions in agricultural work, there is apparently no end. Competitions from the earlier days of organized agricultural effort have been a favourite method of stimulating men to better things, and this principle, needless to say, does not apply to agriculture alone. In almost all branches of agriculture there are competitions of one kind or other, but during the past summer the Ontario Department of Agriculture has been carrying on a very interesting competition which differs in important respects from others which have been held. It was made possible by reason of the federal grant in aid of agricultural instruction work, and undoubtedly represents a maximum of accomplishment for a minimum expenditure. Instead of placing the emphasis on any standard of seed or cultivation, or even yield, it was decided to place the emphasis on the net profit, which, after all, is the final test of successful farming. It will

be generally admitted that those methods which produce the greatest net profit are, generally speaking, the best methods.

"This competition was conducted by the department through its district representatives. Each year the district representatives conduct two- to six-week courses in agriculture in the high school of the town in which they are located. It was thought well, therefore, to restrict this competition to the young men who had taken the course. The choice of crop was left to the competitors so that they might select the crop which they considered most suitable for their particular district. The competition was taken up in twenty-six counties and districts, and altogether upwards of 200 entered. As will be seen from the table below, a large variety of crops were selected. Every effort was made to have it conducted under ordinary farm conditions, and every effort also was made to secure uniformity and accuracy. Each contestant was furnished with a form to set out the different items of expenditure and the different methods of cultivation adopted. For expenses, an allowance of $5 per acre was made for the rent of the land, 10 cents an hour for labour of men or horse; 50 cents a load for manure; and actual cost for seed, fertilizer, spraying materials, etc. In computing the returns, only current market prices were used, and there was no opportunity of securing special fancy prices for a small supply. There is no doubt that in some instances the quality of the product was such as to warrant a price in advance of current market rates, but in order to be absolutely fair to all, even if the value of some crops was under-estimated, all were rated at current rates. The figures used were as follows:—

Oats	$ 0.34 per bushel.
Mangels	0.15 "
Potatoes	0.60 "
Silage corn	2.75 per ton
Seed corn	1.00 per bushel.
Barley	0.60 "

"The plots were visited by the district representative during the summer, and the forms were filled out and signed by the contestants, and witnessed by two disinterested neighbours. In a number of instances the land was situated near a public highway and served as an excellent demonstration to many beyond the immediate friends of the contestants.

"Only one prize was given by the department, consisting of free transportation and living expenses for the short course in live stock and seed judging at the Ontario Agricultural College at Guelph. The average expense would be in the neighborhood of $25, although, of course, those living a considerable distance from Guelph would incur a greater expense. In this way the total cost of the contest for the twenty-six men would be about a thousand dollars.

"The idea was to make it as educational as possible in the most practical sense by showing the profitableness of the application of the best methods in farming. The results justified this expectation, and the experience of two weeks at the short course at Guelph should serve to further intensify this aspect. At the conclusion of the course at the college a further contest was held to decide the best man in the class in stock and seed judging. As a prize for this a gold watch was awarded by

the Deputy Minister and Assistant Deputy Minister of Agriculture. The winner of this prize was Mr. W. E. Dickson, Sault Ste. Marie, Ont., who secured 486 marks out of a possible 650, on five classes of stock and classes of grains and weed seeds. Mr. C. W. Marchant, Lloydtown, Ont., was second with 470 marks."

Up to October 31, 1914, $799.35 of this grant had been expended.

No. 3—Agriculture in the Public Schools.—$10,000.

1912—Under the Agricultural Aid Act	$10.000
1913—Under the Agricultural Instruction Act	10.000
1914— " " "	13.000

While this report deals only with the expenditure of the $10,000 appropriated under the *Agricultural Instruction Act* in 1913, the work of the three years so overlaps that a clear line of distinction cannot be drawn. The expenditure by the Ontario Department of Education was as follows:—

Year ending October 31, 1912	
Year ending October 31, 1913	$ 8.471.92
Year ending October 31, 1914	12.800.00
	$21.271.92

It will be seen that the expenditures fall late: they follow most of the other provincial expenditures, mainly for the reason that they consist, to a large extent, of payments following work that has been spread over long teaching terms. The fact that none of the 1912 grant was used until after the 31st October of that year postponed the expenditure of the two succeeding years.

Mr. S. B. McCready, as Professor of Botany and Nature Study at the Ontario Agricultural College, had been gradually interesting the rural public school teachers in nature study, and had inauguarated a movement which seemed to be promising to the Department of Education. Professor McCready was appointed Director of Elementary Agricultural Education, being attached to the Department of Education, but continuing his connection with the Agricultural College. The sums of money stated above have been allotted to and are expended by the Department of Education in the furtherance of the work supervised and directed by Professor McCready, who has furnished us for this report with the following statement. It is given in full, as Ontario has done more along this line than any other province:—

"The introduction of the subject of agriculture into the schools has been and is a slow process. From the year 1845, when 'The Canadian Agricultural Reader' was published at Niagara for use in the schools, until the present there has always been a more or less varying effort made in Ontario to establish the subject amongst the school subjects. More progress has been made during the past ten years than in any previous period, owing to the fact that the matter has assumed the proportions of a world-wide movement, and has received the active support of governments everywhere. Ontario's efforts in this direction have been greatly encouraged by the provisions of the Agricultural Instruction Act of 1913. Some of the lines of work so helped are set forth below:—

"*In the Public Schools.*—The promotion of this work has been in process of development in Ontario since 1903, through the giving of special grants to trustees and teachers, and the training of public school teachers at the Agricultural College. With special funds from the Dominion grants supplementing the provincial grants, much has been done during the past two years towards a speedier advance. The funds have been expended in many directions. By allowing teachers attending the summer school their railway travelling expenses, teachers from the parts of Ontario remote from Guelph have been encouraged to attend as well as many others; field agents in agricultural education have been sent all over the province to propagandize; the school inspectors, to the number of over eighty, were brought together for a week's special conference on rural school education at the Agricultural College in August, 1913; exhibits dealing with rural school betterment were made at the Provincial Fruit and Honey Show at Toronto, the Provincial Winter Fair, Guelph, the Ontario Educational Association at Toronto University, at the exhibitions, Toronto, Ottawa, London, Chatham, Lindsay, Stratford, Walkerton, and New Hamburg, and at the Dufferin County Trustees' Association at Orangeville and Grand Valley; the services of Mrs. H. B. Miller, as Assistant in Agricultural Education, were secured from April, 1913, to August, 1914; a rural teachers' conference attended by delegates chosen from the most progressive rural teachers in the province by the Teachers' Associations was held during the first week in August, 1914; the work of seed distribution to schools and pupils, carried out under the schools' division of the experimental union, was extended, and the work of school ground improvement under Professor Hutt of the Department of Landscape Gardening, was assisted; the propaganda carried out by means of agricultural education, bulletins, instruction sheets, etc., was also supported from the federal funds.

"*In the High Schools.*—The plans for introducing agriculture into the high schools were commenced in 1913 with the special training of high school science teachers at the Agricultural College. Corresponding to the two-year (summer school) course for public school teachers leading to the elementary certificate in agriculture, a two-year course for high school teachers leads to the intermediate certificate in agriculture. Already about forty teachers have received instruction, and the schools at Essex, Exeter, Clinton, Niagara Falls South, Oakville, Arthur, Drayton, Bowmanville, Picton, and Vankleek Hill are taking up the work. The subject has the status of a bonus for the lower and middle school examinations for teachers' certificates, and in this respect stands on a par with Latin, art, manual training, and domestic science. At the examinations held in July, 1914, over one hundred candidates wrote on the paper on Lower School Agriculture. Next year there will be papers for the middle school also, as two of the schools are giving instruction in three years of the high school agriculture.

"Special grants are paid to both school boards and teachers where the work is carried on, and teachers-in-training are allowed their travelling expenses to and from Guelph. The agricultural representatives or their assistants are also eligible for the special grants, but as a rule their duties in the field do not allow them to undertake the school duties which necessitate their attendance at class at fixed times for several periods each week. The work is supported out of the federal funds.

"Besides the foregoing scheme of teacher-training, another has been planned in conjunction with Toronto, McMaster and Queens Universities.

This is an arrangement whereby students taking the first two years at the universities in certain science courses may take their third and fourth years in agricultural science at the Agricultural College and receive the degree of B.Sc. (Agr.) on graduation. This degree is accepted by the Department of Education as the non-professional qualification for a combined science and agriculture specialist's certificate. So far only one student has entered for the work at Guelph but other candidates are in preparation for it in the universities. With professional training, these teachers will take charge of proposed agricultural departments in our high schools. Liberal scholarships are available to induce candidates to offer for the courses at the Agricultural College, and generous grants are offered, too, to both teachers and trustees, where such agricultural departments are established.

"*Field Agents.*—The work of the Field Agents in agricultural education is deserving of a word of explanation, as they have undoubtedly aroused a wide interest in the teaching of agriculture, especially amongst teachers and trustees. In 1913, six men were selected, and for 1914, on account of the extension of the work, eight men were sent out. These field agents were young men who had had professional training as teachers, and practical experience in teaching in rural schools. All of them were country-born and were pursuing the course leading to the B.S.A. degree at the Agricultural College. In a week's special course they were trained for their duties. They were employed for the five summer months.

"The province was divided into districts and a field agent allotted to each. In visiting schools they co-operated in every way possible with the school inspectors and agricultural representatives. Their first duty was to visit the schools that were earning special grants for the teaching of agriculture. A formal report was made of each inspection, and a copy of the report was forwarded to the trustees from the Department of Education.

"Their work, however, did not consist merely of the inspection of the agricultural teaching. They acted more largely as helpers and propagandists than as inspectors. Many services were performed. They visited schools which were recommended by the inspectors as likely to be interested in introducing agriculture or went wherever they were invited to explain to teachers, trustees, and school patrons how agricultural teaching might be commenced; they taught lessons in agriculture, organized play, inspected pupils' home plots, conferred with the trustees, advised regarding school-ground improvement and tree-planting, laid out school gardens, addressed evening meetings in the schools, sometimes using a lantern, spoke at meetings of Women's Institutes and Farmers' Clubs, arranged for meetings of teachers at convenient centres on Saturdays, organized school fairs and school picnics for groups of schools, met trustees of village or town continuation and high schools and explained departmental plans for the teaching of agriculture; gave courses of instruction in agriculture at the summer model schools and in 1913, at the autumn model schools; attended teachers' associations, made rural educational surveys of selected townships, conducted short courses for public school pupils in the summer holidays at a few schools, held exhibits at fall fairs, assisted the teachers at some of the school fairs held in September, helped in conducting the School Inspectors' short course in 1913 and the Rural Teachers' Conference in 1914.

"*Rural Education Conference.*—Undoubtedly the greatest need in making educational progress is propaganda. The Inspectors' short course held during the first week of August, 1912 and the Rural Teachers' Conference held in 1914 were for the purpose of setting forth the Province's new needs in rural education, and of showing how these needs could be met. Much may be expected from the conferences even if they only have created a sentiment in favour of redirected kind of education for country people. Both conferences were well attended—over eighty public school inspectors were present at the first, and over two hundred rural teachers at the second. The delegates from Teachers' Associations attending the latter, besides reporting at the fall conventions, are carrying on propaganda in many places through the local press.

"Prominent speakers took part in the programme, and all phases of the problems of the education of rural communities were dealt with. Besides instruction on agricultural subjects by college instructors, such matters as the following were dealt with: Rural depopulation and rural reconstruction; the consolidation of schools; township or county school boards versus section school boards; progress in agricultural education in the United States and in parts of Canada other than Ontario; the need for raising of status of rural teachers; plans for school ground improvements; model school gardens; how to teach agriculture in one-teacher rural schools; the Danish Folk-schools; recreation in country schools, and playground equipment; how to make the rural school a social centre; how to conduct school fairs and progress clubs. Reports received from many sources show that the liberation or creation of new ideas as set forth at the conferences is working towards a general awakening in the public in favour of better things in education for the country."

The two grants, that of $10,000 under *the Agricultural Aid Act*, 1912-13, and that of $10,000 under *the Agricultural Instruction Act*, 1913-14, were combined and expended along the following lines:—

Field agents—Services	$4,098 33	
" " Expenses	6,776 31	$10,874 64
Courses at O.A.C., Guelph, expenses—		
Public school teachers		1,726 41
High school teachers		1,491 50
Public school inspectors		1,431 33
Rural teachers' conference		1,949 94
Grants to schools		913 03
Services of instructors		883 63
Miscellaneous printing, stationery, seeds, etc		729 52
		$ 20,000 00

No. 4.—Marketing and Co-operation.—$5,500.

This appropriation was made to establish a new branch to be known as, "The Co-operation and Markets Branch." It was started the first of January 1914, and Mr. Frank C. Hart, B.S.A., was appointed director.

"Born in Nova Scotia, having some experience as a school teacher, having taken a course at the Ontario Agricultural College, and having worked for a short time in the West, and afterwards having served for over six years as district representative of this department in Waterloo county, it is felt that Mr. Hart has many qualifications for an important position of this nature. He was one of the first half-dozen men appointed by the department as district representative, and, taking hold when the work was not known or recognized as it is to-day, it was only by the

exercise of tact, persistence, and energy that he succeeded in popularizing the work of district representative in that county to a very high degree."

The grant was set out somewhat fully in the agreement, and the department announced its purpose as follows:—

"It will be the purpose of the new branch to carry on an educational campaign in various ways to disseminate information on the business side of farming, and especially on the question of marketing. Assistance will be rendered in the organization of co-operative associations, which have already fifty local co-operative fruit growers' associations, with a central selling organization launched last year. There are also several other associations devoted to the marketing of produce of various kinds, as well as many farmers' clubs which buy seeds, fertilizers, etc., co-operatively, and secure the advantages of price and quality to be gained in purchasing in large quantities. It is felt, therefore, that there is a great opportunity for usefulness for a branch of this kind in connection with the department. If it succeeds in effecting, in some degree, closer relations between the producer and the consumer it may prove to have some bearing on that much-debated and universal problem of the cost of living. It should not, therefore, be taken as an indication that educational work is being diverted from production to marketing. There are some who claim that there is too much talk about production and not enough about marketing. There may be a degree of truth in this, but it would be equally unwise to go to the other extreme. It is recognized that quality and honesty of production are essential to successful work in marketing, especially in co-operative marketing, and hence these factors will necessarily be emphasized by the new branch."

When the branch was formed there were the following co-operative selling organizations in Ontario:—

Egg circles	20
Vegetable Associations	3
Live Stock Associations	7
Onion Growers	3
Fruit Growers	52
Seed Corn	2
Seed	5
General Marketing	3
Total	95
Farmers' Clubs	185

Thus it will be seen that the director had a basis for work. Some of these associations are referred to and described in *The Agricultural Gazette* for May, 1914, which contains a series of articles dealing with the co-operative movement in all the provinces of Canada. The term co-operative is very loosely applied in Canada. Many of the so-called co-operative societies have little of the real co-operative element, and there is need for instruction and direction. Ontario and Saskatchewan are the only provinces having special branches for the organization of such associations. Legislation is lacking, and it will be well for public officials to make a careful study of the real principles of co-operation.

The following may be cited as an example of Mr. Hart's work, showing how organization and improved methods of marketing may be profitable:—

> The new Director of Co-operation and Markets visited Manitoulin island addressed a meeting called by the district representative of the department. He took up the subject of co-operation and marketing, and

an expert from the Live Stock Branch of the Dominion Department took up the question of wool grading and sorting. As a consequence, a Wool Growers' Association was formed, and 15,841 pounds of wool were sold. The following proceeds were realized:—

Unwashed: 15,383 pounds—
Medium combing, 23½ cents.
Low medium combing, 22½ cents.
Lustre combing, 21 cents.
Coarse combing, 19 cents.
Rejects, 16 cents.

As compared with a flat rate of 14 cents to 17 cents paid in the ordinary way for such wool.

Washed: 458 pounds—
Lustre combing, 26 cents.
Coarse combing, 25 cents.

As compared with a maximum price of 24 cents paid in the ordinary way.

This also illustrates another kind of co-operation—that between Federal and Provincial Departments of Agriculture.

Up to October 31, $3,496.77 of this grant had been used, made up of salary, travelling and office expenses.

No. 5—Buildings at Ontario Agricultural College—$56,500.

To report on this expenditure fully we must take in the federal appropriations for the three years beginning with *The Agricultural Aid Act* of 1912.

1912.	Field Husbandry building		$ 40,000 00
1913.	Field Husbandry building	$ 21,000	
	Poultry building	30,000	
	Bacteriological building	2,500	
	Dairy barns	3,000	56,500 00
1914.	New buildings and completion of buildings under construction		72,000 00
			$ 168,500 00

The following were the expenditures in connection with the above:—

—	Oct. 31, 1912.	Oct. 31, 1913.	Oct. 31, 1914.	Total.
	$ cts.	$ cts.	$ cts.	$ cts.
Field Husbandry building	1,285 50	47,941 39	11,749 86	60,976 75
Poultry building	..	15,326 62	14,673 38	30,000 00
Bacteriological building	..	2,495 60	4 26	2,497 86
Dairy barn	..	..	3,000 00	3,000 00
Total	..	..	..	96,476 61

From this statement it will be seen that on the 31st of October, 1914, all of the grants of 1912 and 1913 had been expended, with the exception of $23.25 on account of the field husbandry building, and 14 cents on account of the bacteriological building. During November, however, the department began to draw heavily upon the $72,000 grant for 1914-15 in connection with a new physics building, and the completion of the buildings referred to above. It is

expected that about $6,000 will be required to complete the equipment of the field husbandry building and $10,000 to complete the poultry building. The physics building will cost about $50,000, the contract having been let and work started.

The field husbandry building was formally opened, as the tablet states, by the Minister of Agriculture for Canada on January 12, 1914. It was the first to be completed of those erected by the Ontario Government from appropriations provided by the Dominion Department of Agriculture under the Agricultural Aid Act of 1912 and the Agricultural Instruction Act of 1913. The building, which is 146 feet long and 64 feet wide, is practically a fireproof structure, costing over $60,000, built of brick with stone dressing, and the upper story of roughcast. The interior is finished in clear native pine, and the floors are of maple and birch.

The main class-room on the ground floor furnishes seating and table accommodation for 120 students, and there is a short course class-room on the first floor, for 300 students. The lighting of the whole building and the acoustic properties of the class-rooms are excellent. The building is heated from the college heating and lighting plant. The museum and collections of the department will be housed in a special room on the second floor of the building.

The basement is divided by brick partitions into storerooms for grains, grasses, seeds, corn-curing, plant-breeding material, tools, etc., and cleaning and grading seeds by machinery.

The accompanying plans of the ground and first floors show the dimensions and purposes of the principal rooms. The second floor contains large rooms for exhibition and demonstration material.

The poultry building was erected out of the federal grant at a cost of $30,000. The building consists of two stories and basement, and is of plain and substantial brick. It is 63 feet wide and 100 feet long. It will be used both for administration and instruction purposes, and has been planned and largely built under the personal supervision of Prof. W. R. Graham, head of the poultry department at the college. Its arrangement is such as to give the maximum accommodation for educational and demonstration work of all kinds. It has already been partially used to a limited extent, and its conveniences have been very generally commented on and appreciated.

In the basement, aside from the heating plant and storage space, there is a large room 40 feet by 50 feet equipped for instruction work in killing and dressing poultry, accommodating a class of fifty or more students. In this room is given the actual practice of crate or milk-feeding chickens. It has several makes of feeding batteries as well as home-made crates, and is plenty large enough, when batteries are used, to accommodate 1,000 birds. Adjoining this is a student work-room 30 feet by 40 feet to give the students an opportunity to practice building, setting up, and preparing poultry appliances.

On the first floor are administration offices, accommodating Professor Graham, his assistants and stenographers. The balance of the floor is taken up by class-rooms, shipping room and museum for poultry appliances. There is one class room 40 feet by 32 feet, seating 120 students. One room is equipped with egg-sorting tables for pedigree work, and is arranged in such a way that a class of thirty may be taught modern methods of egg handling. There is also a record office for the keeping of breeding records.

The second story is used entirely for instructional purposes. The entire north end, for a width of 15 feet, is a laboratory. This room is well lighted, and is used for giving instruction in all lines pertaining to poultry, such as anatomy, caponizing, etc. Adjoining the laboratory on the east side is a large class-room 40 feet by 50 feet which will seat practically two hundred people. This not only serves as a class-room but is large enough for institute meetings. The entire west side is fitted up as a poultry show room. This room is well lighted

and makes an exceptionally good room for the purpose. Nearly four hundred birds can be placed in coops, and it makes the teaching of the judging and mating of poultry very practical. This room is connected by double doors with a large class-room so that after judging has been completed by the student, classes of fowls can be moved into the large room for lecture work. On the south end is a reading room and library. This room is nearly 30 feet by 20 feet. It is used by the poultry short-course students and the College Poultry Club.

A reference to the plans from which the building was constructed will give the arrangement in detail. The demands on the poultry department at the college have been increasing very rapidly during the past few years, and this additional equipment will place the department in a position to meet these demands with efficient service in years to come.

No. 6—Short Courses, Stock and Seed Judging—$7,500.

Out of the federal grant in 1912, $7,000 was set aside for this work. Up to 31st October of that year, only $675 had been expended, for the reason that short courses of this kind are carried on mainly through the winter months. To the balance of $6,325 there was added the grant of 1913–14, making $13,825. From 31st October, 1913, to the 31st October, 1914, $13,148 has been expended, which leaves $627 to be added to the $7,500 of the 1914-15 grant for carrying on the work during the winter of 1914–15. The general supervision is in the hands of Mr. G. A. Putnam, Superintendent of Farmers' Institutes. The expenditures are for services of instruction, travelling expenses, and miscellaneous expenses in connection with meetings, such as fitting up buildings, arranging for stock, etc.

This work, of course, was being carried on before the federal grants were available, but through these, as the following statement shows, the number of courses has been greatly increased. Mr. Putnam has prepared the following report upon this work:—

> "The Farmers' Institutes early realized that where practical demonstrations could be given in conjunction with the lectures the audience was more attentive, the speaker could convey his ideas to each individual in a simpler, clearer, and more practical manner, and the benfits derived from the meeting were more lasting.
>
> "The imparting of information regarding the improvement of the live-stock industry readily lends itself to the demonstration method.
>
> "Before the arrival of the district representative, little practical work could be undertaken. With the advent of a representative of the Department of Agriculture, the Institutes Branch had in each county a man specially trained in organization work, interested in all branches of advanced agriculture, understanding the needs of not only the county but of each individual community, who would co-operate and, by personal influence, prevail upon the community to support by their presence and interest all undertakings of the department.
>
> "The district representative has co-operated with the Institutes Branch in arranging for and conducting the short courses held during the years indicated below:—

"1908–09	16	courses.
1909–10	25	"
1910–11	42	"
1911–12	56	"
1912–13	88	"
1913–14	88	"

"The average attendance at these courses in various seasons has ranged from 900 to as low as 300 last year, when the weather conditions were most unfavourable for a majority of the classes.

"For each course, a large building, shed, or tent is provided, and seats erected to accommodate from 200 to 300 people. The district representative, or some other person representing the Institutes Branch secures representative animals, of the classes to be considered, from the best stockmen of the district.

"It has been found most successful to have each course cover two days only, holding two afternoon sessions and, in a few cases, a meeting on the evening of the first day, when addresses are given by the instructors on different subjects of interest to the live-stock men.

"At an afternoon session a lecture is given by the instructor based on the class to be studied, pointing out the ideal form desired in the individual, the characteristics and common defects of the breed, and the more important blemishes. An opportunity is then given each one present personally to examine and place in order of merit the animals before him.

"The instructor starts the discussion by inviting a number of the prominent breeders to give their placings and their reasons. The criticism which follows allows each one present an opportunity to see and examine the merits and demerits of each individual.

"The class is placed by the instructor, and the reasons for his placings given, which enable all in attendance to see the individuals as they appeal to the instructor.

"This method of spreading the experience and knowledge of expert breeders gives the audience an opportunity to not only hear what a prominent breeder has to say in regard to the selection and breeding of animals, but allows of personal inspection and criticism, which trains the eye to recognize the type required and the strong characters and deficiencies of each individual examined. The breeder is thus able to select and breed animals which, when properly developed and trained, afford the breeder a profit for his undertakings in the improvement of his live stock.

"At a limited number of short courses, one session, usually the forenoon, has been devoted to the consideration of seed improvement, the instruction consisting of a lecture and practical work, each member of the class being given samples to judge. It has been thought advisable to arrange for special seed meetings independent of the live-stock work for this season."

No. 7.—Women's Institutes.—$6,500.

The appropriation set apart for Women's Institutes was used in making an advanced move in systematic instruction for women—the providing for instruction through demonstrations and lectures in three courses: (*a*) food values and cooking, (*b*) sewing, and (*c*) home nursing. It was extension work in domestic science, and is a state preliminary to the inauguration of women district representatives. The following instructors were employed:—

Mrs. Altenburg—Sewing, September, 1913, to May, 1914—10 classes, 515 members.

Miss Gertrude Gray—Cooking, November, .1913, to May, 1914—10 classes, 294 members.

Miss Elizabeth McKay—Sewing, October, 1913, to April, 1914—15 classes, 346 members.

Miss Mary E. MacKenzie—Cooking, October, 1913, to April, 1914—13 classes, 346 members.

Miss E. M. Collins—Sewing, January and February, 1914, 7 classes, 143 members.

Mrs. M. MacPhayden—Cooking, October to December, 1913—5 classes, 113 members.

Total, 84 classes, with 1,757 members.

The following report on this work has been furnished by Mr. C. A. Putnam, Superintendent of Women's Institutes:—

"The people of the rural districts appreciate very highly the opportunity of taking courses of lectures bearing upon lines of work which have received more or less attention for a number of years, but have not been studied in a systematic manner. In organizing the work we require groups of institutes conveniently located to form classes so that the instructor may spend one day a week at each point for a period of ten weeks. In a few districts, where only three or four institutes wished to take advantage of instruction, arrangements were made to give two lessons a week to each class and, in some cases, three, while in the class formed by the Norwood Institute the work was carried on continuously for two weeks, the class receiving a lesson each afternoon.

"The institutes are required to furnish a suitable room in which to hold the classes, and to provide the necessary material for demonstration purposes; and in the case of dressmaking classes, were also required to supply ruler, pins, needles, thread, and the material to be sewn.

"The charge for instruction in "food values and cooking" and "home nursing" was $1.25 per person, and one-half of the amount above $25 collected being paid to the instructor, the other half being used to defray local expenses.

"In the case of the sewing class the charge was $2 per person—$36, one-half of all collections beyond that sum being paid to the instructor, the other half being used to defray local expenses. The courses cover the following work:—

FOODS AND COOKING.

Regular List.

Lecture No. 1. Fruit—Typical methods of cooking; combinations; different ways of serving fresh fruit.

Lecture No. 2. Vegetables—Fresh, starchy, and dried.

Lecture No. 3. Milk—Soups, puddings and combinations, with especial relation to infant, children, and invalid diet. Invalid cookery.

Lecture No. 4. Cereals and Cheese—Various methods of cooking; their high food value compared with other more expensive foods.

Lecture No. 5. Eggs—Correct methods of cooking; variations in methods; storage; substitutions for meat.

Lecture No. 6. Tender meats—Roasting and broiling; the correct cuts; food value compared with other meat cuts and other foods. Tough meat—braised dishes, stews, and soups.

Lecture No. 7. Baking-powder breads, yeast breads, and fancy breads.

Lecture No. 8. Cake and little cakes.

Lecture No. 9. Puddings and desserts.

Lecture No. 10. Salads—Preparation of the ingredients, dressings, etc.

Optional List.

Lecture No. 1. Made-over dishes.
" 2. Fireless cookery.
" 3. Poultry.
" No. 4. Breakfast dishes.
" No. 5. Table service.

The department prefers to have the Institutes choose the Demonstration-Lectures indicated in the "regular list." If, however, there is a strong preference for one or more of the topics given in the "optional list" in place of some of the regular subjects, they may be substituted.

SEWING.

"The instruction in this course varied from time to time. An effort was always made, however, to make the work as practical as possible, and to meet the wishes of the classes in the various centres. The courses included selections from the following: Waists, skirts, underwear, one-piece dresses, adjusting patterns, cutting and fitting, household sewing, etc.

HOME NURSING.

1. Sick room—sanitation, ventilation, care, etc.
2. Bedmaking for various forms of sickness.
3. The bath.
4. Emergencies.
5. Hot and cold applications.
6. Bandaging.
7. Disinfectants and observations of symptons.
8. The administration of food and medicine.
9. Baby hygiene.
10. Review and general discussion.

"During the season of 1912-13, 1,667 people took advantage of the instruction, while in 1913-14, the total was 1,757, 1,004 in "sewing," and 753 in "food values and cooking." Among the latter there were a few, about 45, who took home nursing in preference to the course in cooking.

"There was every prospect of this developing to large proportions during the present season, but on account of the general activity in aid of the Red Cross work and other relief efforts, many of the institutes which were considering the formation of classes have decided to devote all their energies to furnishing supplies for the soldiers and the needy.

"Many letters of appreciation have reached the department, and when conditions become normal we may, I think, look for an extension of this very effective means of providing systematic instruction to the residents of the rural districts.

"In August, 1913, an illustrated bulletin descriptive of the work was issued. It is No. 215 in the Ontario series, "Demonstration Lectures in Domestic Science, Sewing, and Home Nursing."

Up to October 31, 1914, $3,877.92 had been expended out of this grant.

No. 8.—Short Courses for Judges.—$5,140.

Some years ago a change was made in the judging at agricultural exhibitions, spring horse shows, and seed fairs. It was this—a list of judges was selected

by the provincial department with a view to having men more or less expert. These were allotted to the various exhibitions, and their services and expenses paid by the department, a moderate charge per diem being made to the local society. Last year it was decided to give these judges a course in training, partly to make them more expert in their judging, and also to train them to give the reasons for their decisions, and to impart some information to the onlookers that would be of value; in other words, to make the judging a demonstration or an instruction. For this purpose the sum of $5,140 was set aside from the federal grant. The judges were taken to the Agricultural College at Guelph and to the Central Experimental Farm at Ottawa, and there received courses of instruction from the professors and instructors at these two institutions. The travelling expenses were paid out of this grant, but nothing was allowed for their time. This work was in charge of J. Lockie Wilson, Superintendent of Agricultural Societies.

No. 9—Underdrainage—$5,000.

This work is under the direction of the Physics Department of the Ontario Agricultural College, and the first surveys were made and plans prepared in the fall of 1905. In 1906, public announcement was made that survey plans would be made for farmers who were willing to pay the expenses of the surveyors from Guelph to their farms. The work grew, and in 1908 the legislature made a special grant of $1,000 to employ assistants. In 1910 this was increased to $4,000, and this amount has now been supplemented in 1913 and 1914 by $5,000 each year out of the federal grant.

A farmer makes application for a drainage plan. Prof. W. H. Day, of the college, sends an assistant to make a survey or arrange with a district representative to make a survey. A plan or map is prepared. This shows the levels, the location of the drains, the grades, and size of tile to be used. Then arrangements are made to hold demonstrations on various farms. Notices of the same are sent to the neighbouring farms. If available, a traction ditcher is secured. The surveyor gives a talk on the map, shows the methods of doing the work, and explains the benefits likely to results. Then work is started, and the farmer completes the job. Those who attend the demonstration are sure to watch the results in the succeeding years. Nine years of this work may be summed up as follows:—surveys, 1,614; area surveyed, 74,957 acres; length of drains, 9,173 miles; demonstrations held, 491; average attendance, 21. All of the $5,000 was used, the larger portion being for services of fieldmen, draughtsmen, operator of ditching machine, grading, and laying tile.

Prior to 1908 there were not more than two or three traction ditchers in use on farms in Canada. Professor Day reports that to-day there are probably one hundred or more in Ontario alone.

No. 10—Demonstrations in Vegetable Growing—$2,500.

This was entirely new work. Mr. S. C. Johnston, B.S.A., a graduate of the Ontario Agricultural College, was appointed in April, 1914, to take charge of it. He covers the entire province, working where possible with the district representatives in encouraging the growing of vegetables, the growing of the best varieties, and the best methods of marketing. He also prepares bulletins on this subject. The Toronto Vegetable Growers' Association in September passed a very strong resolution approving of the work of Mr. Johnston in demonstrating the value of spraying celery to prevent blight, and stating how valuable was the information thus imparted.

The $2,500 was used mainly in salary and travelling expenses.

No. 11.—Demonstration Work on Soils—$2,500.

In order to start a movement in favour of the drainage of soils in districts where the farmers were doubtful or indifferent, $2,500 was set aside for demonstration plots. The following is Prof. W. H. Day's report on this work:—

> "*Drainage Demonstration Plots.*—In spite of our systematic and persistent endeavours, there are certain portions of the province where, for one reason or another, drainage is yet practically unknown. In Haldimand county, for example, the farmers claimed that the clay was so heavy that it couldn't be drained—the water wouldn't "soak down to the tile." For such districts we decided something more potent than surveys must be done, so it was decided to actually put in some drains on a few drainage demonstration plots. For this work $5,000 was appropriated in 1912 from the federal grant, and the same again in 1913. A traction ditcher was purchased for the work, and eight practical drainage demonstrations have already been held. In Bruce, the first plot drained grew a crop of oats that won a prize in the 1913 field crop competition, it being the first grain crop on that land in fifty years, although the field had been cleared all that time. From Haldimand, where two plots were drained, comes the report in both cases that water was running freely from the drains during the autumn rains of 1913, and great results are expected in arousing interest in drainage. In Peterboro, Lennox and Addington, Hastings, and Dufferin, other plots have been drained, and during the coming season as many demonstration plots as possible will be selected and drained, chiefly in the eastern portion of the province for there drainage has lagged more than in the west."

"The following are the conditions of the demonstrations:—

> (*a*) The plots must be situated in a locality (township) where little or no drainage has been done.
>
> (*b*) A field of from 10 to 12 acres is required. It must lie along a main road, and slope towards the road, so that passers-by may observe results. There must be a good outlet reasonably convenient to the field.
>
> (*c*) The Department of Physics makes the survey, prepares the plans, digs the drains, and lays the tile, holds a public drainage demonstration while the drains are being put in, and possibly another the following year, when the crops are growing, to observe and discuss results.
>
> (*d*) The Department furnishes half the tile, the owner provides the other half, hauls and distributes all tile, fills the ditch and boards the men while the work is going on. He also agrees to leave the other half of the field undrained for three crops, sow both halves to the same crop each year, harvest and thresh the two parts separately, and report promptly to the department the yields from the drained and undrained parts."

An interesting and instructive report and discussion on this subject was printed in *The Agricultural Gazette* for November, 1914, pp. 890-897.

Practically all of the grant of $2,500 was expended in services and expenses of the demonstrations.

The Agricultural Instruction Act has made it possible to employ, permanently, two demonstrators and instructors in drainage work, in addition to a number of temporary assistants.

No. 12—Demonstrations in Live Stock and Poultry—$4,000.

When the first federal grant was provided in 1912, extension work in poultry was begun. Mr. F. N. Marcellus, B.S.A., was appointed as field instructor under Prof. W. R. Graham of the Agricultural College. His work is to go

through the province and, in co-operation with the district representatives, arrange for demonstrations in poultry, incubation, construction of poultry houses, feeding and care of poultry, marketing of poultry, organization of egg circles, etc. Part of the above grant is used to pay the instructor's salary ($1,600) and expenses.

No. 13—Demonstrations in Fruit—$3,000.

Experts were employed to go into various counties and show the farmers how to prune and spray their orchards, and how to care for their fruit. It was not a case of doing work for them, but of showing them how to do it for themselves. The work was of the nature of demonstrating how old neglected orchards could be made productive and profitable. This demonstration work is exactly in line with the recommendation of Mr. D. Johnson, Dominion Fruit Commissioner, who, after a careful personal examination of all the fruit-growing districts of Canada in the summer of 1914, has recommended that the orchards we now have be properly looked after and made productive rather than that additional orchards be set out. "Let us take care of the trees we have, produce the finest grade we can, and I believe there is a fair return assured under normal conditions."

Mr. P. W. Hodgetts, Director of the Ontario Fruit Branch, who supervised the work reports as follows:—

> "By word and by practice, the officers of the Fruit Branch have endeavoured to show the growers the best means of handling the closely planted and thickly growing trees which are common to all counties in Ontario. Starting in Lambton county early in the spring, with a force of twelve men, the department has visited practically every fruit-growing county from west to east as the season advanced. Where conditions warranted it, special men were stationed for the full pruning season, with instructions to help any person applying for aid. Many meetings were arranged at the request of the growers, while individual applications for assistance were also taken care of as fully as men and money would permit.
>
> "In counties where the growers were more than usually interested, orchards were selected for demonstration purposes as in previous years, the work being carried on jointly by the Fruit Branch and the district representative. In some instances, special appropriations were made by the municipalities to help defray part of the expenses. In Lambton county, the council voted $250 for the purchase of spraying outfits to operate in orchards selected and pruned by the officers of the department. Outside of the district officers and their assistants, twenty-two men were engaged, and ten thousand dollars was expended during the season in the demonstration work. The following counties were visited at different times: Huron, Lambton, Essex, Kent, Elgin, Middlesex, Brant, Haldimand, Welland, York, Simcoe, Waterloo, Ontario, Northumberland, Durham, Prince Edward, Hastings, Leeds, Dundas, Glengarry."

As the results of work on a demonstration orchard of 4 acres, in 1913, he gave minute details of receipts and expenditures. The general result was as follows: Expenses of pruning, spraying, cultivating, picking, packing, and marketing, $410.38; receipts, $697.50; net profit, $287.12.

In addition to the above, the Fruit Branch conducted twenty-three packing schools, where fruit growers were instructed in the best methods of packing apples and other fruits in boxes.

The federal appropriation of $3,000 was all used to supplement the provincial appropriation in the above work, as follows:

Services of instructors	$ 1,487 00
Travelling and living expenses	839 00
Livery hire	283 75
Spraying material	76 00
Miscellaneous	314 25
	$ 3,000 00

No. 14—Demonstrations in Bee-Keeping—$1,360.

This amount was added to the provincial appropriation to extend the work carried on under Prof. Morley Pettit, Provincial Apiarist, who is attached to the Agricultural College. Young men, students especially trained at the college, are sent out to inspect apiaries and to give instruction to the bee-keepers in the handling of their colonies and the increasing of their stocks. Apiary demonstrations were held in fifty-seven places during the past year. All of the appropriation of $1,360 has been expended.

No. 15—Lectures on Horticulture—$500.

This sum was all used to pay for the services and expenses of specialists to address meetings through the province, principally meetings of the Horticultural Societies. The work is supervised by Mr. J. Lockie Wilson, Superintendent of Horticultural Societies.

No. 16—Miscellaneous—$4,233.32.

Up to October 31, the total charge against this appropriation was $1,652.91 of which $945.63 was for demonstration plots in alfalfa. This work, which I have been urging upon the various provinces, is of great importance in the profitable increase of mixed farming, and we are anxious to see the instruction and demonstration extended. *The Agricultural Gazette* for April, 1914, gave a special series of articles on the work being carried on in all the provinces and by the Dominion Department of Agriculture.

The work carried on in Ontario, through the federal grant, was directed by Prof. C. A. Zavitz of the Agricultural College, through the district representatives. The following is Professor Zavitz's report as to its extent:—

> "Experiments at the Ontario Agricultural College and elsewhere have shown the superiority in hardiness of the Grimm and the Ontario Variegated varieties of alfalfa over the common variety. In 1912, one thousand dollars of federal money was set aside for the testing of these varieties in the different counties of Ontario. In 1913, 20 pounds of seed of the Ontario Variegated was sent to each of the twenty-two district representatives. In each case the seed was to be sown on 1 acre of land, divided into four equal parts, one-quarter of the land to receive inoculated seed and no lime; another quarter, inoculated seed and lime; another, uninoculated seed and no lime; and still another, uninoculated seed and lime.
>
> "In 1913, Ontario Variegated seed was almost a failure in the province. We therefore imported from Minnesota, North Dakota, and Montana, about eight hundred pounds of the best seed obtainable of the Grimm alfalfa. This cost from 40 to 75 cents per pound. In the early part of 1914, sufficient seed for sowing 3 acres of land was sent to each of sixteen district representatives for sowing in July with the object of

seed production. Part of the seed was to be sown in rows at different quantities per acre, and part was to be sown broadcast. This should furnish information in regard to the hardiness of the Grimm alfalfa in different counties; the suitability of the different counties for seed production; and the most likely method of sowing to give the best results. Besides this, seed was sent through the district representative to members of the Alfalfa Seed Circle in Haldimand county, and to others, sufficient for sowing at least 16 acres. It will be seen that over 60 acres of Grimm alfalfa were sown in Ontario last year with a definite object of seed production. We still have some of the Grimm alfalfa seed on hand which we expect to have sown next spring, the object being to increase the area of Grimm alfalfa for seed production."

Those who are interested in this subject are advised to read the address by Professor Zavitz in the Tenth Annual Report of the Canadian Seed Growers' Associations, Ottawa, 1914, which can be had on application to the Publications Branch of the Department of Agriculture, Ottawa. The importance of this warrants the reprinting of the letter of instruction sent out by Professor Zavitz to the Ontario district representatives:—

"May 21, 1914.

"DEAR SIR,—The production of seed of a hardy variety of alfalfa in Ontario is very important. I have taken particular pains to secure some very choice Grimm alfalfa seed at considerable expense, to test the hardiness of this alfalfa in some of the counties, and with the object of ascertaining the suitability of different localities for seed production. I am now in a position to furnish each of twenty-five district representatives with fourteen (14) pounds of this seed, providing he will have the seed sown on 3 acres of land at some place in his county in accordance with a definite plan, which is as follows:—

"1. At least 40 rods from any alfalfa field, select 3 acres of uniform land which has a good natural underdrainage, and preferably soil of rather a heavy character, elevated and sloping.

"2. The land should be summer-fallowed thoroughly until July.

"3. After a nice rain in July, and as soon as the land can be worked on the surface to good advantage, the seed should be sown.

"4. The 3 acres should be divided into six equal parts, thus making six plots of one-half acre each, and the sowing should be done as follows:—

"Plot No. 1.—Broadcast 6 pounds (12 pounds per acre).
" 2.—Rows about 30 inches apart 3 pounds (16 pounds per acre).
" 3.—Rows about 30 inches apart 2 pounds (4 pounds per acre.
" 4.—Rows about 30 inches apart 1½ pounds (3 pounds per acre).
" 5.—Rows about 30 inches apart 1 pound (2 pounds per acre).
" 6.—Rows about 30 inches apart ½ pound (1 pound per acre).

"For sowing the rows, a turnip drill or a Planet Junior drill would answer the purpose.

"5. Cultivation should take place between the rows in the autumn of the present year, and in the spring, and after each crop is cut in each year following in which the alfalfa grows satisfactorily.

"6. The cultivation throughout should be conducted with the object of producing a *large yield of seed of good quality*. For seed production,

the cultivated-row system requires less seed, favours a larger seed production, conserves soil moisture, kills the weeds, destroys grasshopper eggs, etc.

"7. This experiment should be one of the most important ever conducted with alfalfa throughout Ontario."

A small portion of the miscellaneous grant was used also for demonstration work and instruction at the Winter Fair, Guelph, December, 1913. Prof. R. W. Wade, Secretary, has furnished a report which may be suggestive to other boards carrying on similar work. We are intending to have prepared a statement of suggested lines of demonstration, the carrying out of which would add much to the educational value of these exhibitions and competitions. It will be printed in *the Agricultural Gazette*:—

"*Dressed Poultry.*—To show the visitors at the Winter Fair the manner in which dressed poultry is packed and made ready for the market, three crates of birds were purchased from a large packing company. They were on exhibition during the time of the show, and illustrated size of birds, method of packing and, in fact, gave a clear demonstration as to how birds should be handled in a wholesale way.

"*Exhibit of Bacon Hogs.*—On Tuesday, December 9th, the prize-winning pairs of bacon hogs were placed in a series of pens, which pens were labelled, giving the standing of the various pairs; thus giving an opportunity to the farmer and stockman to see plainly the type required to meet the demands of high-class trade. Afterwards, when the pigs were slaughtered, the prize-winning carcasses were placed in order of merit, to allow the public to follow out the awards when alive and also to make a study of the carcass to show the form and finish most desired by the packers.

"*Beef Carcasses.*—Three beef carcasses were chosen to represent three grade of quality, No. 1 would be considered good carcasses, No. 2 fair but rather tough, No. 3, unfinished. Half of each carcass was hung in a showcase, showing weight of animal alive, weight of half carcass and dressing percentage. The other half of each carcass was divided into wholesale cuts. The weight of cuts were given and the price per pound as valued by one of the leading butchers of the city. This demonstration was to show the feeder the mistake in not feeding a sufficiently long time in order to make the animal sufficiently ripe, so that, according to its quality, it might bring the highest price then ruling. The consumer also had an opportunity to see the difference between the various grades of meat in the various cuts, which would enable him to have afterwards a standard as to whether he was being furnished cuts from a good, fair, or indifferent carcass."

The following is a statement of the *permanent instructors* provided for and made possible under the Agricultural Instruction Act in 1913-14:

Twenty district representatives.
Twenty assistant district representatives.
Two permanent assistants in drainage demonstrations.
Frank C. Hart, Director of Co-operation and Markets.
F. N. Marcellus, B.S.A., Field Instructor in Poultry.
S. C. Johnston, B.S.A., Field Instructor in Vegetables.
H. M. King, B.S.A., Assistant in Live Stock.
Mrs. H. B. Miller, Assistant in Nature Study.
W. L. Iveson, Assistant Chemist, O.A.C. (soils).
R. Bryant, Assistant Chemist, O.A.C. (soils).

Thus, in the first year of the Agricultural Instruction Act, forty-nine permanent instructors were added to the staff of the Ontario Department of Agriculture, besides a very large number of temporary assistants.

The following is a statement of the expenditures for agriculture made by the Provincial Department of Agriculture out of provincial funds:—

	1912	1913
	$ c.	$ c.
Agricultural societies	141,[illegible] 24	132,796 18
Live stock [illegible]	30,[illegible] 54	39,271 17
Farmers' and women's institutes	31,[illegible] 70	42,[illegible] 25
Dairy [illegible]	14,050 81	14,415 17
Fruit branch	26,583 87	32,[illegible] 32
Associations, dairy, exp. union, corn growers	7,[illegible] 00	7,730 00
Horticultural [illegible]	18,167 04	19,137 64
Ontario veterinary college	32,[illegible] 25	32,029 74
Eastern Dairy school	12,2[illegible] 52	10,[illegible] 18
Ontario agricultural college	2[illegible],168 08	2[illegible],751 32
Farm forestry	8,401 72	2,173 [illegible]
Apiculture	3,[illegible] 48	[illegible],920 06
Demonstration farms	10,786 80	9,954 07
Reports, bulletins, etc	22,549 [illegible]	[illegible],[illegible] 03
Bureau of industries (statistics)	3,701 55	3,885 45
District representatives	35,[illegible]78 78	40,[illegible]96 68
Miscellaneous	702 22	1,041 08
	687,[illegible]03 04	[illegible],[illegible]01 20
Revenue	167,224 91	177,131 50
	520,[illegible]78 13	516,[illegible]79 70
Civil Government	57,538 39	[illegible],[illegible]15 58
	577,816 52	[illegible],[illegible]95 28
Expenditure on Capital Account	52,521 43	167,[illegible]47 57
Total	[illegible],[illegible]38 95	744,122 85

SECTION 7.—MANITOBA.

	Grants.	Expended.
	$ cts.	$ cts.
1. Educational work in bee-keeping	1,000 00	1,000 00
2. Demonstration trains	5,000 00	5,000 00
3. Demonstration farms	13,500 00	13,500 00
4. Courses of lectures among farmers on field and animal husbandry	5,000 00	2,785 99
5. Lectures and demonstrations on the feeding, killing, and dressing of all kinds of poultry	2,000 00	1,328 40
6. Weed eradication, demonstrations with such persistent weeds as couch grass, Canada and Perennial sow thistle	500 00	258 30
7. Educational work in connection with the co-operative marketing of farm products, such as eggs, meat, etc	3,000 00	1,142 75
8. Demonstration plots of alfalfa	2,000 00	1,079 51
9. Boys' and Girls' Farm Clubs	2,000 00	2,000 00
10. Travelling instructors in agriculture	3,000 00	1,275 00
11. Experiments in tile draining	1,800 00	1,800 00
12. Travelling instructor on home economics, including expenses	2,500 00	2,500 00
13. Equipment for home economics demonstration work	2,000 00	1,750 04
14. Travelling instructor in dairying, mainly for foreign population	3,000 00	3,000 00
15. For short courses and institute work	..	....
16. Excursions to the Agricultural College at Winnipeg, and Experimental Farm, Brandon	100 00	100 00
17. Demonstration and instruction in vegetable growing and other horticultural subjects	200 00	193 86
18. Publication of bulletins on above subjects	2,900 00	2,900 00
19. Miscellaneous	2,230 05	1,101 65
Total	51,730 05	42,725 50
Unexpended.	..	9,004 53

The above is the statement of the appropriation for Manitoba, and the expenditures under the various heads up to November 1, 1914. Manitoba, in applying for the grant for 1914-15, followed practically the above classification, making only two changes. The result is that the work is continuous, and as soon as any appropriation of the first year is used up, a similar grant of the second year can be drawn upon. The result then is that along the above lines, $56,874 had been expended by the 1st of November, the second year appropriation having provided about $12,000. If all the provinces could follow similar lines every year the examination of accounts and reporting on same would be somewhat simplified. This is a matter that we now have under consideration.

No. 1—Bee-Keeping—$1,000.

On August 1, 1913, Mr. Robert Muckle was appointed provincial apiarist at a salary of $80 a month. He was located at the Agricultural College, which possessed an apiary and provided the equipment for his work. He gave instruction at the college, carried on experiments, demonstrated to farmers how to handle their bees, and had the responsibility of enforcing the Act dealing with foul brood, passed by the legislature just before his position was created.

The following were the experiments that he conducted:—

(1) An experiment for the prevention of natural swarming. Mr. Muckle proposes to test the plan of giving sufficient hive space and ventilation to check this tendency.

(2) An experiment for the purpose of obtaining data as to the time necessary to properly manage six hives of bees on the average farm.

(3) An experiment to ascertain the possibility of rearing queens successfully in Manitoba. Many of the settlers require new blood for their apiaries, and so far have had to send out of the province for it.

(4) An experiment to demonstrate the different methods of clipping wings of queens.

(5) An experiment illustrating the smoke method of introducing queens.

This grant was all used in salary and expenses of the apiarist.

No. 2—Demonstration Trains—$5,000.

Two demonstration trains were run in the summer of 1913, one on the Canadian Pacific Railway and the other on the Canadian Northern Railway, each for a period of three weeks. The railroad company in each case provided the cars and hauled the trains free of charge. The department and the Agricultural College equipped them and provided the instructors. Each train consisted of one or two live-stock cars, one box car with feed, a baggage car for train crew, a refrigerator car, four cars for poultry, field crops, mechanics, dairy and home economics, together with diner and sleeper for the instruction staff. Dominion department officials assisted the college staff and the extension branch of the department. Three meetings were held every day, 9 to 12.30 a.m., 2 to 5 p.m., and 7 to 10 p.m. The trains were well advertised, and an advance agent preceded the train by three or four days to make final arrangements.

In 1913, 30,800 persons attended the meetings. Full details as to the equipment of these trains and methods of instruction will be found in *The Agricultural Gazette* for July and September, 1914. The opinion in Manitoba is that these demonstration trains have been of great value in stimulating interest in agricultural production and in introducing methods. The hearty co-operation of the railroads is testimony that they "pay" as practical methods of instruction.

The variety of the programme on each train will be gathered from the following brief details:—

"CANADIAN NORTHERN RAILWAY TRAIN.

"*Live Stock Carried.*—Hogs and sheep of various breeds.

"*Farm Machinery.*—The car devoted to mechanical equipment carried pneumatic tanks for water supply, sewage-disposal tanks, gasoline engines, farm lighting plant, farm home conveniences, such as operating cream separators, churns, etc., by use of small engines.

"*Model Layout of 160-acre Farm.*—Showing crop rotations, buildings, fences, etc. Demonstrations with different kinds of soils, taken from all parts of the province.

"*Poultry Demonstrations.*—Killing, dressing, and packing for market. An entire car was devoted to poultry, and contained incubators, brooders, and general poultry appliances, model poultry houses, travelling crates, shaping boards, etc. Specimens of the various breeds of poultry were carried.

"*Demonstrations in Canning and Preserving.*—Given in the Home economics car; also use of labour-saving devices. Home decoration, etc., also dealt with.

"The *Field Crops Car* carried samples of the standard varieties of staple crops in Manitoba. Talks on rotations, weeds, etc., were a feature.

CANADIAN PACIFIC RAILWAY TRAIN.

"*Special Lectures and Demonstrations* for young men and young women.

"*Live Stock Carried.*—Cattle, sheep, horses, etc.

"*Weed Specimens and Instruction Concerning Them.*—Enlarged clay models of weed seed on exhibition, and lectures in weed identification and eradication given.

"*Display of Manitoba Birds and Insects.*—Their relation to agriculture—injurious, beneficial.

"*Home Economics for Girls and Young Women.*—Talks on cooking, sewing, etc.

"*Moving Pictures* showing plants developing, buds opening, poultry-killing, etc.

"*Miniature Lay-out of Farm Buildings and Grounds.*—Illustrating protection of buildings from lightning, sewage disposal, ventilation, farm lighting, use of concrete, road construction, etc.

"*Information Bureau.*—In this car considerable of the Agricultural College equipment was carried, and men and women were invited to ask questions relating to Manitoba agriculture and farm life generally."

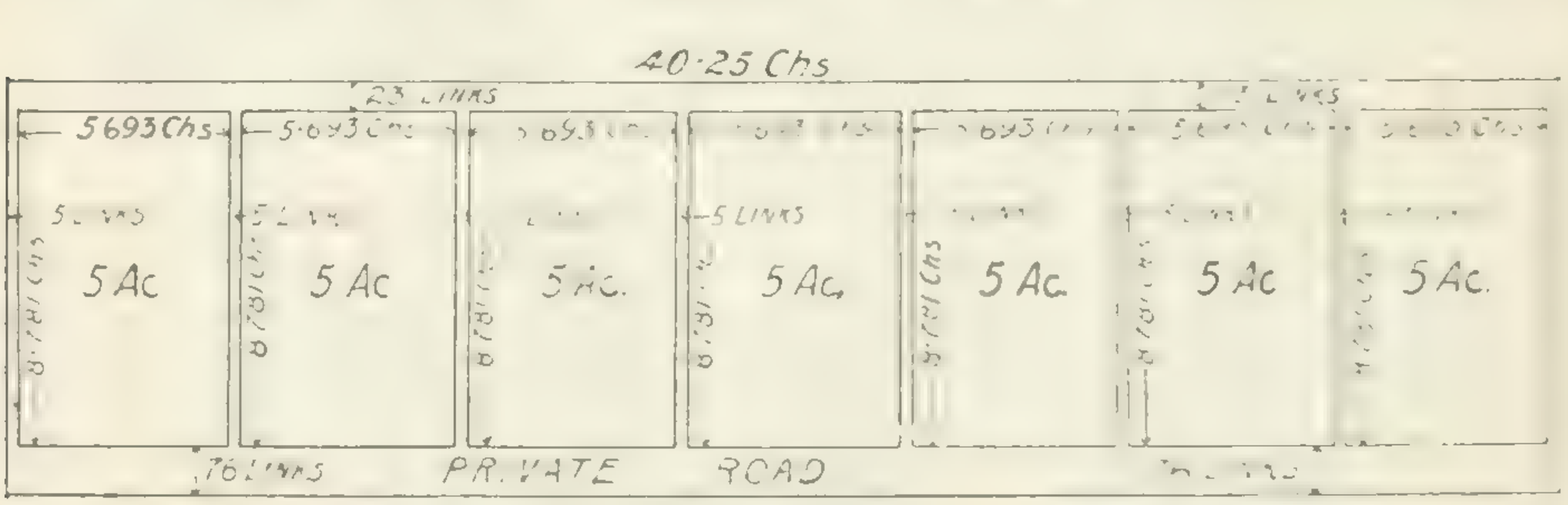
No. 3 Demonstration Farms—$13,500.

As may be judged by the size of this grant, which has all been expended, it may be concluded that this is considered by the provincial department its most important and promising line of instruction.

Twenty demonstration farms were planned for, to be located in different parts of the province. The object is to demonstrate to the farmers that "better results can be obtained from a systematic and scientific rotation of crops including clovers, fodder corn, and other intensive crops than by haphazard methods of cultivation."

The area included in each of these farms is approximately 40 acres. The department incloses the property with a substantial fence. It is then divided into 5-acre fields. The actual farm operations are conducted by the owner of the land under instructions from the Department of Agriculture. The agreement between the owner and the department covers a term of twelve years.

Twelve demonstration farms were located in 1913 near the following places: Warren, Carberry, Virden, Baldur, Harding, Boissevain, Portage la Prairie, Souris, Deloraine, Melita, Somerset, and St. Pierre Jolys. All were fenced, but work was started in 1913 only in the first seven. The other five have been put into cultivation in 1914. Eight others are partially selected.



Plan of Demonstration Farm.

ROTATION FOR THE BALDUR DEMONSTRATION FARM.

Field.	1914.	1915.	1916.	1917.	1918.	1919.
No. 1	Fallow	Clover	Wheat	Oats	Corn	Wheat
" 2	Clover	Wheat	Oats	Corn	Wheat	Fallow
" 3	Wheat	Oats	Corn	Wheat	Fallow	Clover
" 4	Oats	Corn	Wheat	Fallow	Clover	Wheat
" 5	Corn	Wheat	Fallow	Clover	Wheat	Oats
" 6	Wheat	Fallow	Clover	Wheat	Oats	Corn
" 7	Alfalfa	Alfalfa	Alfalfa	Alfalfa	Alfalfa	Alfalfa

The owner of the property agrees—

To furnish 40 acres of land free for a term of twelve years, and to sow and cultivate a systematic rotation of crops in accordance with instructions received from the Department of Agriculture;

To keep a careful record of the time of seeding and harvesting, the yield and quality of the products, etc.;

To forward to the department a daily report of the temperature and rainfall, as well as the work accomplished each day during the growing season.

The Department of Agriculture agrees—

To fence the said land, to erect a platform scale for the weighing of the products, and to pay for all farm work done at the rate of 10 cents per hour for each horse and 20 cents per hour for each man employed;

To give the products of the farm to the owner of the land with the exception of any portion that may be required for exhibition purposes;

To purchase any seed not procurable on the owners' farm, such as clover, Indian corn, etc.

The value of these demonstrations can, of course, be determined only after a term of years. Farmers will be encouraged to come and see the work and the crops. From time to time bulletins will be published and the results announced. Curiosity will be aroused, and it is hoped that the methods will be adopted by neighbouring farmers. Rotation of crops and the adoption of mixed farming are of great importance in Manitoba agriculture. All the money appropriated has been expended in fencing, preparation of the ground, and the purchase of seed.

No. 4.—Lectures on Field and Animal Husbandry.—$5,000.

These were short courses held in mid-winter. A car on the C.P.R. was placed at the disposal of the department. Three or four lecturers were sent, including Mr. Ward Jones, the Superintendent of Extension Work, an instructor in horticulture, one in live stock, and one in field husbandry. A similar party went out in a Canadian Northern car. Ninety-four meetings were held along the C.P.R., attended by 5,526 persons; and eighty-four were held along the C.N.R., attended by 5,547 persons. Thirty-four addresses also were given at seed fairs. Great interest was shown, and the meetings as a rule were largely attended.

No. 5.—Demonstrations in Poultry.—$2,000.

Professor Herner, Poultryman of the Agricultural College, was sent to agricultural societies, live stock shows, and school fairs to demonstrate how to kill

and dress poultry, and how to prepare same for the market; also how to pack eggs. Demonstrations were given at forty-one places. Early in 1914, Mr. J. E. Bergey was engaged to carry on demonstration work among the farmers.

Up to the 1st November, $1,328.40 had been used for services and expenses.

No. 6.—Weeds.—$500.

This amount was set apart for demonstrations in connection with the eradication of weeds. Only $258.30 had been used to November 1, 1914.

Manitoba has an Act known as *The Noxious Weeds Act* which provides for the destruction of weeds on roads, streets, and lanes. There is power given for municipalities, through their inspectors, to destroy growing crops. The Department of Agriculture has an officer known as the Provincial Noxious Weeds Inspector, Mr. R. G. O'Malley, whose duties are to see that the inspectors appointed by the Municipal Councils perform their duties. An article by Mr. O'Malley describing the provision of the Act appeared in *The Agricultural Gazette*, June 1914.

A Municipal Weed Inspectors' Short Course and Conference was held at the Manitoba Agricultural College from June 10th to the 12th, for the purpose of aiding weed inspectors in performing their duties, and the consideration of the following topics in weed control:—

> "*Department of Botany.*—Identification of weeds at different stages of growth; identification of weed seeds; proper and common names of weeds; extent to which, and reason why, one weed is more noxious than another; means by which weed seeds are conveyed from one place to another; how green, or how soon after ripening, will seeds of the worst weeds germinate; how long will weed seeds retain their vitality in the soil.
>
> "*Department of Field Husbandry.*—Waste due to weeds; cropping systems in relation to weed control; method of dealing with wild oats, twitch grass, thistles, mustards; results obtained by spraying weeds with chemical solution.

No. 7.—Marketing.—$3,000.

This federal grant was used under the direction of Professor Herner and Professor Mitchell, and the following are their reports in regard to the same:—

"CO-OPERATIVE MARKETING OF POULTRY PRODUCTS.

"*By M. C. Herner, B.S.A., Professor of Poultry Husbandry, Manitoba Agricultural College.*

"To a limited extent only has co-operative marketing been followed in Manitoba thus far. What was perhaps the initial move in improving the method of marketing poultry products was made by the Winnipeg Poultry Association during the summer of 1913. This association secured two stalls in the "Central Farmers' Market" at the rear of the Industrial Bureau building. They placed a man in charge of these stalls, and he was expected to sell the products of the poultry yards of the various members. This man retailed eggs at a 5 per cent commission, out of which he paid $1 a day rent for the stalls, cost of remittances, etc.

"For quite a while this method of marketing was very satisfactory for the members. The supply of eggs was not nearly equal to the demand, with the result that some hucksters began to ship in eggs.

"The Manitoba Agricultural College also found this market a very good outlet for the eggs from the Poultry Department. The eggs were placed on this market in dozen cartons and each egg was stamped with the college stamp. Every egg was guaranteed to be less than five days old. These eggs found a ready market and sold at 35 cents per dozen during July when the ordinary run of farm eggs, brought in by hucksters, sold at 23 cents; guaranteed fresh at 25 cents; and stamped eggs, sent in 30-dozen cases at 28 cents per dozen.

"These conditions prevailed during July and a part of August. At this time the broiler trade began to grow and quite a large number came in every day. Owing to lack of cold storage facilities and lack of management by the man in charge the two stalls presented a rather untidy appearance. Coupled with this difficulty was the lack of finances to carry on the project. The harder the association members worked to get the trade the greater were the daily receipts and the greater the commission, and instead of the funds coming back to promote still further the interests of co-operation, they went into one man's pocket. Various other discrepancies or undesirable features also entered, producing such an unsatisfactory condition that the association gave over the marketing of their products to the management of the Central Farmers' Market. This corporation charged 10 per cent commission, which was considered somewhat high when eggs were marketed in dozen cartons.

"The association furnished a rubber stamp to any person who wished to send in eggs. This stamp was sold at cost price (55 cents). All the eggs were stamped on the large end and the farmers sent in their eggs as often as possible. This method of marketing was very satisfactory to the farmers for quite a while, and a good many stamps were sent out; but late in the fall the finances of the market became somewhat shaky and a good many discontinued their shipments.

"Considerable live poultry was also shipped in, killed and disposed of at fairly good prices early in the season; but later on more stuff came in than could be handled and a good part of the live poultry had to be kept over a few weeks in consequence. Some of the birds were in poor condition when they came and an additional week or two of poor feeding and improper housing put them in anything but good market condition. Lack of cold storage facilities here again played havoc with the product.

"These are briefly the things brought out in last season's work. While it was co-operative marketing, still we did not derive the benefits of co-operation. The money made over expenses should have gone towards expansion. Five per cent commission is sufficiently high where eggs are sold in dozen cartons. Lack of cold storage facilities seriously handicapped the successful application of the principle of co-operation. Lack of finances led to the abandonment of the project.

"This season's work is not fully decided upon as yet; but as a result of last season's work it has been found that there is an exceptionally good market here for a high class guaranteed new-laid egg put up in dozen cartons. A year ago not a stamped egg could be found, whereas now quite a few concerns place a premium on this class of eggs. One firm, which has taken the entire output during the winter from the Manitoba Agricultural College, had made the following offer to the members of the Winnipeg Poultry Association:—

'A commission of 8 cents per dozen will be charged on eggs retailing at 51 to 60 cents per dozen;

7 cents for eggs selling at 31 to 40 cents per dozen;

5 cents for eggs selling at 25 to 30 cents per dozen;

4 cents for eggs selling at 20 to 24 cents per dozen.'

"Whether or not this schedule will be satisfactory remains to be seen.

"*Organization Required.*—The farmers are ready to co-operate in the production and marketing of their poultry products. The only thing required is organization and education and financial backing in the way of grants sufficient to get the organization in good working condition.

"CO-OPERATIVE DAIRYING.

"By J. W. Mitchell, Superintendent of Dairying.

"Outside the town and city milk and cream trade, which is very considerable in itself, dairying takes the form mainly of butter-making in the province of Manitoba.

"The dairy industry is developing quite rapidly, and the spirit of co-operation is keeping pace with this growth. While the output of creamery butter for the province was about 3,000,000 pounds in 1912, it was practically 4,000,000 pounds for 1913.

"This indicates the strong tendency there is towards factory or co-operative dairying. There are thirty-five creameries in operation in the province this year. The great majority of these are owned by joint stock companies, the shareholders being made up of farmers and others interested in the development of the dairy industry.

"This year, for the first time, the creameries are co-operating with each other in the adoption of a uniform system of grading cream and paying for the same on a basis of quality. Not only this, but in addition they are co-operating with the Department of Agriculture, which supplies one man as inspector and instructor for the creameries and another to grade their butter as it comes into the market.

"Thus, through the co-operation of the farmers themselves in the making of their butter, the co-operation of the creameries with the Department of Agriculture through the service of the creamery inspector and the butter grader, a complete chain is formed which links up the work from the production of the raw material to the putting of the finished product upon the market.

"The Manitoba Grain Growers' Association comprises in its membership over 12,000 farmers organized into more than 300 local associations. This association constitutes the Manitoba section of the Canadian Council of Agriculture.

No. 8—Demonstration in Alfalfa.—$2,000.

In 1911 and 1912, eleven plots were sown to alfalfa in various parts of the province. In 1913, nine more were started. The seed was supplied and assistance given to make sure that it was properly put in. Nearly all of these plots have been fenced in to protect them from cattle. Hereafter the alfalfa plots will be in connection with and form a part of the demonstration farms.

The result of establishing these plots is that farmers in the neighbourhood are beginning to sow alfalfa, they know what variety to sow and they learn from the demonstration how to put the seed in.

One of the most important results of this demonstration work is the obtaining this year, 1914, of quantity of home-grown seed of high quality. The Manitoba Department makes the following report:—

"The first threshing of alfalfa took place on the local Government demonstration farm at Neepawa on October 31. About 6 acres of the first crop of alfalfa was threshed, and from this one field of less than 6 acres was obtained 25½ bushels (1,535 pounds) of clean, pure seed, the quality of which is exceptionally high; 98 per cent germinated by test.

"This alfalfa was grown on the farm of H. Irwin, near Neepawa. The seed was the well-known Grimm variety, and was sown in rows 3 feet apart, and so thoroughly cultivated by machine and by hand that all weeds were kept down. About 3 pounds of seed per acre was used, and the field treated with soil from old alfalfa land. The soil of this field was a warm sandy loam. The harvesting was done by mower, and the alfalfa cured in bunches and afterwards stacked for some weeks. Beyond an occasional unmatured seed, the sample is apparently high grade.

"The wisdom of the policy of agricultural education laid down by the department at Ottawa is constantly being verified. This experiment in alfalfa has been made possible by the Dominion Government grant for this purpose.

"The machine used in threshing this alfalfa is the first clover machine that has ever started in Manitoba, and one of the first to be used west of the Great Lakes. It gave perfect satisfaction, and it is hoped that the farmers will go more into the growing of alfalfa, and that many of these machines will be required in the near future."

A detailed statement as to the methods adopted in Manitoba was given in *The Agricultural Gazette*, April, 1914. The department is quite confident that alfalfa may become a most important crop in Manitoba.

No. 9—Boys' and Girls' Farm Clubs.—$2,000.

In 1913 there were eight of these clubs, with a membership of 450; in 1914 there were twenty-eight with a membership of 1,600. The department supplies them with potatoes and corn for planting, and with eggs for hatching. In the fall a fair is held separate entirely from that of the grown-ups, and prizes are donated by the Agricultural Society or Farmer's Institute. All of this grant was used for supplying material and for printing and incidental expenses in connection with the fair.

Children's fairs also are conducted in connection with schools. At Stonewall there is a consolidated school having an agricultural instructor on the staff, Mr. E. Robinson, B.S.A. At this school there is a junior Agricultural Society, which held an exhibition on September 24, 1914.

The chairman of the school board, Mr. Ira Stratton, and the agricultural instructor give advice and encouragement, but the active officers are all pupils; $129.75 was contributed by residents for prizes and expenses.

There were competitions in school work, writing and drawing, arithmetic, maps, composition and essays, hand work and manual training. The members of the Boys' and Girls' Clubs had competitions in potatoes, corn, and poultry judging. Class 9 was for vegetables grown in the school gardens. Any who are desirous of seeing the full "rules and regulations" of such a fair might be able to secure a copy by writing to Mr. Stratton, Stonewall, Man. It was at the consolidated school at Stonewall that the first agricultural teacher was engaged. There are agricultural teachers now at four of the schools, namely, Dauphin, Roblin, Holland, and Teulon. (See appendix.)

"Eight branches of the 'Manitoba Boys' and Girls' Club,' formed last May, have each held a most successful club fair at which the chickens, potatoes, and corn produced by the boys and girls were on exhibition. At Roland were shown 263 chickens, 63 bushels of hand-selected potatoes, and 66 sheaves of fodder corn; the district raised $127 in prize money, and the total prize money paid out was $225. This will give some idea of the interest being taken in the Boys' and Girls' Club movement.

"After the fairs the members took their pure-bred chickens home to keep for foundations of farm flocks, their potatoes for seed, etc.

"At the Brandon Dressed Poultry Show in 1913, several members of the Boys' and Girls' Club made entries, the Department of Agriculture financing the exhibit. Many of these entries captured first, second, third, and fourth prizes. The total exhibits consisted of 32 turkeys, 28 ducks, 28 geese, 62 chickens, and 108 eggs.

"The method of forming a branch of the club is simple. All boys and girls between the ages of 10 and 16 (inclusive) are invited to compete, whether attending school or not. The municipal council, school board, board of trade, or similar organizations agree to contribute sufficient funds for the club fair in the fall. One member from each family is given, free of charge, 1 dozen eggs from the best obtainable pure-bred-to-lay hens. Every member of the families represented is given 10 pounds of pedigreed potatoes and 150 grains of each of three varieties of fodder corn. Each club member also receives a club button with the member's individual number. The Poultry and Field Husbandry Departments of the Agricultural College issued a circular of rules and regulations, with information and instructions regarding each of the contests planned, and these were really the text-books for the club members. Each member received a circular and a note-book free of charge, and these were put to splendid use.

"In future the girls will have separate work, with contests probably in canning, preserving, bread-making, butter-making, and plain sewing. The boys will need to know the proper crops for their land, what feeds produce growth and fatten live stock, how to market their products economically, how to co-operate among themselves, etc.

"The Boys' and Girls' Club work will be enlarged upon this spring. The branches at present formed are located at Roland, Manitou, Darlingford, Warren, Starbuck, Stonewall, Oak Lake, and Neepawa.

"The results obtained certainly justify the efforts of the department in the above work. The boys and girls have in turn interested their parents, as is evidenced by the many inquiries received.

"One girl at Neepawa raised ten chickens from one setting of eggs and sold five cockerels at $2.50 each. Other members had equally high offers, but would not sell. One boy at Darlingford (a nephew of Professor Bedford) grew 472 pounds of potatoes from 10 pounds of seed. This is a record, so far as we know, for potato production under field conditions in Manitoba. Many members grew as much as 400 pounds from their 10 pounds of seed.

No. 10—Travelling Instructors in Agriculture.—$3,000.

This grant was used to pay for services and expenses of persons sent to address and instruct farmers. It is along the same line as No. 4 above, and might well have been added to it.

No. 11—Tile Drainage.—$1,800.

This work is carried on by Mr. S. A. Bedford, Deputy Minister of Agriculture, and the Soil Physics Department of the Agricultural College. The work was divided into two sections, experimental and demonstration.

EXPERIMENTAL.

As very little tile drainage has ever been done in Manitoba, it was decided to secure data on the following points: (1) the depth necessary to place tile so that they would not be thrown out of line by the passing of traction machinery; (2) the depth for best drainage; (3) the most suitable distance apart for placing lines of tile; (4) the minimum grade that could be used; (5)the use of gravel as surface inlets; (6)the use of gravel instead of tile where ditches are very shallow; (7) to determine cost of tile drainage; (8) to compare crops produced on drained and undrained land.

The depth for tile to avoid injury by traction machinery was determined by laying short lines of tile at 2, 2½, and 3 feet in depth, then driving over them several times with a traction engine. A rather soft, spongy spot of ground was used for this experiment, and careful levels taken.

The results showed that the tile at 2 feet depth were thrown out of line from one-quarter inch to one-half inch, while the tile at 2½ feet and 3 feet were still in perfect line after the engine had passed over them and the soil was removed. It might be possible to secure good results from tile at 2 feet depth on fairly dry land where no heavy machinery is to be used in cultivation.

DEMONSTRATION.

The department carries out a complete underdrainage on a selected soil and thus directly demonstrates the value. The first demonstration was on a piece of wet low lying land at the new agricultural College, thereby giving instruction at first hand to the students. In this the Departments of Agriculture and Public Works co-operated. A full report with illustrations appeared in *The Manitoba Agricultural College Gazette* for October, 1913. "The work was done by prison labour under the direction of the Department of Soils, and it is a pleasure to be able to say that the men worked faithfully, and did the work exceptionally well in every respect." This is quite an interesting combination—the Public Works Department supplied the prison labourers, the College and Department of Agriculture supplied the plans and supervision, and the Dominion Department of Agriculture supplied the funds. The result is satisfactory. In the fall of 1913 the corn on the tiled-drained land was cut by a corn binder, while in the other low places in the same field the corn had to be cut by hand. This land is now being used for experimental plots.

No. 12—Travelling Instructor in Home Economics.—$2,500.

No. 13.— Equipment for Home Economics Demonstrations.—$2,000.

There is a well-organized Home Economics Branch at the Agricultural College. Under the Federal Act it was decided to organize an extension branch. Miss Hattie M. Gowsell was appointed as instructor for this purpose. She makes her headquarters at the College, but is under the direction of the department. Her duties are to give instruction throughout the province and to organize Women's Clubs or Home Economic Societies.

Vote No. 13 was directly connected with No. 12. Expenses in connection with the equipment of these societies were met out of this vote. The most important charge, however, was for books for circulating libraries. Six sets of books in cooking, nursing, etc., and 210 on other subjects connected with home economics and women's life were purchased, and the libraries thus made up were loaned on application to the societies. For list see *The Agricultural Gazette*, May, 1914, page 387.

A series of bulletins on Home-nursing was issued.

No. 14—Travelling Dairy Instructors for Foreign Settlers —$3,000.

There are farm settlements of Ruthenians, Poles, Russians, Scandinavians. To reach these, special instruction must be provided. They do not read papers in English, nor do they attend the meetings provided for English-speaking farmers. Accordingly, it was determined to make special appointments out of the federal grant. Mr. W. J. Crow was appointed travelling instructor, and given an assistant and interpreter, Mr. E. Chinpak, a Ruthenian. One hundred meetings were held in northern Manitoba and seventy-five in the southeastern parts of the province. These were held in school-houses, churches, and in the homes. As a result of this work, creameries that formerly positively refused to receive milk from such settlers are now in many cases very pleased to receive it. The results are reported by Mr. Bedford as being most encouraging.

No. 15—Short Courses and Institute Work.

This was practically similar to that under No. 4 and, not being required, was, by consent of the minister, transferred to No. 3, demonstration farms.

No. 16—Excursions to College and Farm.—$100.

It had been intended to encourage the visiting of the Agricultural College and the Experimental Farm at Brandon, but other work was taken up.

No. 17.—Demonstrations in Vegetable Growing.—$200.

This grant was used to give instruction to some foreign settlers who were living on small farms near lake Manitoba, where they were growing vegetables of various kinds.

No. 18—Bulletins.—$2,900.

The following bulletins were prepared and issued by the department:—

No. 1. Classification of the Horse.
No. 2. Twelve Noxious Weeds.
No. 3. Care of Milk and Cream.
No. 4. The Protection of Farm Buildings from Lightning.
No. 5. The Farm Garden.
No. 6. Farm Poultry in Manitoba.
No. 7. Hog Raising in Manitoba.
No. 8. Cow Testing.
No. 9. Repairing Farm Equipment and Roads.
No. 10. Plans for Farm Buildings.

From 2,500 to 5,000 were issued of each of the above bulletins and distributed free to the farmers.

No. 19—Miscellaneous.—$2,230.05.

The statement of the expenditure under this section is as follows:—

Camera, for demonstration farms and alfalfa plots	$	192 70
Creamery convention expenses		98 45
Ninga Stallion Show		200 00
Farm boys' expenses to Industrial Exhibition Winnipeg		340 00
Farm Garden bulletins		170 00
Total	$	1,101 05

SECTION 8.—SASKATCHEWAN.

Under the *Agricultural Aid Act* this province in 1912 received $34,296.29, which was apportioned as follows:—

Extension work of the College of Agriculture	$ 15,000 00
Short courses in weed control	3,000 00
Instruction in dairying and poultry	4,000 00
Advancement of live stock interests	4,296 29
Supplementary grants to live stock associations	7,500 00
Poultry Association	500 00
	$ 34,296 29

The first grant in 1913 under the Agricultural Instruction Act was allotted as follows:—

No. 1. Instruction in dairying	$ 9,499 75
No. 2. Instruction in live stock	5,860 48
No. 3. Weed Control, field officers, etc	5,463 64
No. 4. Director of co-operative organization	1,393 28
No. 5. Instruction in construction of buildings	2,424 95
No. 6. Bulletins	2,506 04
Total expended by department	$ 27,148 14
No. 7. College of Agriculture, Saskatoon	27,148 15
	$ 54,296 29

All of the amounts allotted for expenditure by the department have been expended. The amount paid over to the College of Agriculture is now being expended during the current college year.

The following statement from the annual report of the Minister of Agriculture of Saskatchewan for 1913, p. 9, will fairly well explain the general line of expenditure of the above appropriation:—

> "Mention should be made of the fact that the department was enabled to carry on additional work along instructional lines by reason of the sum of $27,150 which it received during 1913 from the Dominion Government under the provisions of the Agricultural Instruction Act. A similar sum was also paid to the College of Agriculture from the same source to supplement its funds for extension and research work. The sum expended by the department was used principally to supplement the appropriation of the dairy, live stock, and weed branches, and enabled the department to prepare and issue several bulletins, and to maintain in the field a number of additional inspectors and instructors."

No. 1—Instruction in Dairying—$9,499.75.

This amount was used to supplement the regular provincial grant. It was expended in paying part of the salaries and travelling expenses of four instructors, employed throughout the year under Mr. W. A. Wilson, Dairy Commissioner; also part of the expenses of a short course in dairying, the Dairymen's Convention and travelling instruction cars. All of the money was expended.

A special dairy instruction car was fitted up by the department and the College and moved from place to place over the C. P. R. In 1913, thirty-six meetings were held, with a total attendance of 1,720 persons.

No. 2—Instruction in Live Stock—$5,860.48.

All of the above was used in paying the salaries and expenses of four field instructors in live stock. These men were employed from three to twelve months, working under the direction of Mr. J. C. Smith, the Live Stock Commissioner. They did inspection, gave instruction, advised in connection with stallion enrolment. They also assisted in the distribution of live stock.

No. 3—Weed Control—$5,463.64.

This money was used in paying the salaries and expenses of men engaged in demonstration and instruction work under Mr. H. N. Thompson, Provincial Weed and Seed Commissioner. Mr. A. F. Mantle, Deputy Minister of Agriculture, sets forth their work as follows:—

> "The work of these men is of a varied nature; one of their main duties is to direct the efforts of the municipal agricultural secretaries in their respective districts. Owing to the extent of the territory to be covered, and the scarcity of trained men, it is impossible to have an expert agriculturist working in each rural municipality. This being the case, the municipalities have been advised to appoint as municipal agricultural secretaries, persons who have demonstrated their ability to farm successfully in the district. These municipal officers devote all of their time to the promotion of better farming in their districts. They travel through the country holding public meetings and visiting the farmers on their farms. In this way they get into direct touch with farm conditions, and are able to give advice on the farmers' problems. The department's field representatives direct the work of these municipal officers, advise them in regard to matters connected with field husbandry and address many of the meetings which the local secretaries have arranged. In municipalities where no agricultural secretary has been appointed the field representatives meet the municipal councils, address them on agricultural topics and endeavour to impress upon them the advisability of appointing such officers.
>
> "A two weeks' short course for agricultural secretaries and weed inspectors is held in Regina every summer in the month of June, and a useful programme of instruction is provided."

No. 4—Director of Co-operative Organization—$1,393.28.

> "To encourage the further organization of co-operative associations for the purchase or sale of farm products or supplies the Provincial Department of Agriculture has established the Co-operative Organization Branch. The work of this branch is to gather and disseminate information regarding co-operation and to assist in the organization of all kinds of practical co-operative associations by supplying information regarding markets, freight rates, shipping regulations, etc., and by giving assistance in drawing up suitable constitutions and by-laws.
>
> "This Branch has charge of the administration of the Agricultural Co-operative Associations Act, which was passed at the 1913 session of the Provincial Legislature and under which co-operative associations, for producing and marketing farm products or purchasing farm supplies may be incorporated."

Mr. W. W. Thompson was appointed to take charge of this branch and thus the grant was used to pay salary and expenses. For further information as to the extent and nature of co-operative organizations in Saskatchewan see *The Agricultural Gazette* for May, 1914, pp. 366 and 402.

No. 5—Instruction in Construction of Buildings—$2,424.95.

For instruction purposes the following models were prepared: two models of farm barns, illustrating different styles of hip-roof construction, lighting, ventilating, etc., one model of sheep barn, showing racks, doors, etc.; one model poultry house, cotton-front construction, scratching floor, nests, roosts, etc.; two model piggeries, one feeding, one farrowing pen; one model cow-stall, floor, trench, manger, stanchions, etc. These were constructed in full detail, and were used at fairs in 1913 and in better-farming train; also at College of Agriculture, Saskatoon.

No. 6—Bulletins—$2,506.04.

This grant was used as follows:—

Bulletins on Better Farming	$ 1,484 75
Bulletins on Sheep Industry	1,021 29

The former was a reprint of Bulletin No. 31, and was widely distributed by municipal agricultural officials.

No. 7.—College of Agriculture.—$27,148.15.

As has been stated before, the College of Agriculture is one of the faculties of the provincial University of Saskatchewan, located at Saskatoon. Dr. Walter Murray is President of the University, and W. J. Rutherford is Dean of the College of Agriculture. It is controlled and directed by a board, and is related to the Provincial Legislature through the Department of Education. The following report by Dean Rutherford explains concisely the plan of using the federal grants:—

> "The Saskatchewan College of Agriculture has received to date from the Dominion Aid and Instruction Acts, a grant of $15,000, and $27,138 was voted at the last meeting of the Provincial legislature, making a total of $42,138. A careful survey of the problems to be solved in the best interests of the people of Saskatchewan made it clear that well-trained men were much needed for research, teaching and extension, so it was deemed wise to use the money apportioned to the college almost wholly in salaries for men to strengthen the research and teaching staffs of the different departments already manned and equipped, viz., field husbandry, animal and poultry husbandry, agricultural engineering, physics and chemistry. The disbursements in this connection up to December 31, 1913, amounted to $6,639.46. A balance of $5,161.67 defrayed the salary of a director for the homemakers' work and expenses in connection with domestic science short courses, homemakers' meeting and convention, additional extension work in rural districts, including those settled by foreigners, making a total of $11,801.13 spent up to December 31, 1913. We propose to spend money from the same source during 1914 in salaries for men in the departments already named and, in addition, veterinary science and dairying, to the amount of $30,700. Some of the money from 1913 had to be carried over to 1914, and it is altogether likely that some from 1914 will be carried over to 1915, as it is not an easy matter to lay hands upon the man to fill a position just at the time he is wanted.
>
> "Saskatchewan will in the near future require a large number of well-trained men to carry forward her agricultural work at the university, in the high schools, collegiate institutes, normal schools and other educa-

tional institutions. District representatives, travelling instructors, and demonstrators will soon occupy an important place in the machinery and equipment for bringing about rural and agricultural advancement. In the preparation of men for such work, we plan to serve the province.

"It is planned to use the staff of the college in three lines of work—teaching at the college, extension and research. In this way they will at all times be in touch with the problems of the people working on the land and at the same time will be kept bright for their teaching in class. The grant from the Dominion Aid and Instruction Acts has made it possible for us to do this to a greater extent than we would otherwise have been able to do.

"The College of Agriculture reaches the people on the farm directly through its Extension Department. The Department of Agriculture transferred this work to the college along with a number of its staff when the college was organized, as a part of the University of Saskatchewan. I handed over to it the superintendence and direction of the Agricultural Society work as well. This organization affords the college excellent opportunities for reaching large numbers of people during the year, and at the same time constitutes the connecting link between the College of Agriculture and the Department of Agriculture. The college directs the work and recommends the grants which are paid by the Department of Agriculture. It is estimated that during the year of 1913 the college reached directly upwards of 250,000 people through its extension work. The summer fairs, seed grain and poultry fairs, good farming competitions, fields of standing grain competitions, spring stallion shows, and ploughing matches are all directed from the college and furnished with competent judges. Circuits for meetings are arranged for in the winter and competent speakers provided them. In June similar meetings are arranged for in the newer districts, where successful farmers from the older districts meet the new settlers and discuss with them the best methods of starting there farming operations as to breaking, seeding and after tillage. Speakers are sent into the districts where foreigners have settled largely, with a view to assisting them.

"In co-operation with the Department of Agriculture, lecturers and demonstrators have been sent out on the dairy trains, and lectures and demonstrations given at the chicken fattening stations on the type of bird to fatten, methods of fattening, killing, plucking, and packing.

"The summer fairs, stallion shows, ploughing matches and seed grain fairs are all used for demonstrating better types and methods.

"Short courses were held in February and March at seven different points: Maple Creek, Carlyle, Milestone, Alsask, Oxbow, Macklin, and Colonsay. Lectures and demonstrations were given on tillage, cereals, forage crops, use, care and management of farm implements and machines, beef and dairy cattle, hogs, sheep and swine and poultry. Home economic lectures and demonstrations are provided for the women and girls. At most places the school children attend the lectures during the day instead of their regular classes at school. At Maple Creek there was an attendance of 200; at Carlyle, 150. Members of the college staff and college graduates who are successful farmers in the province comprise the staff for these short courses schools."

The women's organizations of Saskatchewan are known as Homemakers' Clubs, and they are organized and directed by the College of Agriculture, with which they are kept in close touch. Miss Abbie DeLury, of the college staff, is superintendent. She graduated from Macdonald Institute at Guelph in 1906 and took further work at Columbia University. After serving on the staff

of Macdonald College, Quebec, she went to Moosejaw, Sask., and, through the federal grant, was appointed in June, 1913, to the provincial university, as director of women's work. Miss Bessie Harrison is her assistant. There are now seventy-eight Homemakers' Clubs in Saskatchewan.

The following is Miss DeLury's report on the work of the Homemakers' Clubs:

> "The first clubs, to the number of between twelve and fifteen, were organized in the fall of 1910. They were organized as a part of the extension department of the College of Agriculture. Agricultural Societies had already been established, and it was thought that the women of the province needed to meet to discuss their problems, as well as the means it would afford them for a little more social life. The idea took root a little slowly at first, perhaps because distances are so great—the clubs seem to grow from one another.
>
> "At the time of the May convention of 1913 there were forty-five clubs. Last May there were ninety, and now we have nearly one hundred and thirty. The May conventions are a very prominent feature in the life of the clubs. The expenses of one delegate from every club are paid, but most of them send another at their own expense, and many more come at their own personal expense. They live at the College Residence while in attendance, and enjoy a most pleasant time together. We have had many women at convention who had not been away from their own locality before for ten years. As yet we have but one central convention. We have not yet organized into districts as the women do not yet seem to like the idea of giving up their one central convention, but we look forward to that necessity in the near future.
>
> "In many of the clubs most of the members have to drive 8 or 10 miles, and they say they would never have got to know one another had it not been for the club, and they seem to enjoy the work much more than anything of the sort they were ever engaged in. The universality of its scope seems to appeal to them.
>
> "It would seem that the opportunities of social life that have resulted would alone justify the existence of the organization. That is not to say that serious work has not been attempted by them. There is much talent in the country, some of it long-buried until the club work started, and excellent papers are prepared by the members. Their subjects chiefly relate to domestic problems such as "food economy," "clothing," "house building and furnishing," "beautifying of school grounds and buildings," "establishing of rest rooms and community club rooms," "district nursing," and social problems in general. I think I may say that the study of educational problems has been perhaps the largest feature of their work so much so, that they are recognized by the prominent educators in the province as their most valuable allies.
>
> "The university has sent out sixty circulating libraries for club communities, and each club has been provided with a set of reference books to help them in preparing papers and discussions. The books for circulation are intended to set the idea of libraries afloat in the hope that people will be induced to supplement them as they have done in the majority of cases. For instance, in one community, a gentleman turned over his library of one hundred volumes, another gave a set of Dickens, another the works of Tennyson, and several others have contributed.
>
> "This year, we thought that hard times in the province would perhaps not be conducive to growth and that we might expect discouragement and lassitude in the already established clubs. It has been quite the contrary. There has never been so much activity everywhere. Even

in the poorest clubs, funds and clothing have been raised for the Patriotic fund, the Belgian Relief fund and Red Cross work. At present there is great activity in relieving distress in the province. Through the efforts of the clubs, hundreds of families have been clothed, and the work is still going on with energy.

"As for my connection with the work—before I came to the university the clubs were visited once a year by a speaker and sometimes a demonstrator. This was often unsatisfactory because of the difficulty in finding suitable persons in the province to take a two weeks' work in the year and often visits would not time very well with the needs of the people. I came a year ago last June to direct the energies of the clubs, under the guidance of Dean Rutherford and Mr. Greenway. My work consists chiefly in corresponding with clubs, providing literature for them and visiting them. In this last work, I am assisted by Miss Harrison, who lectures or demonstrates according as is wished. The meetings for which a speaker is invited are usually made social affairs, and the men are invited. This method of visiting at a call from the clubs seems to serve the purpose better than having a set time, as the clubs get the help just when they feel the need."

Up to 30th September, 1914, the college expended on homemakers' work out of the federal grants the sum of $4,616.21 for salaries and expenses of instructors and for short courses in home economics.

The following appointments have been made to the staff of the college out of the federal grant, and thereby the university is enabled to carry on its agricultural extension work:—

J. M. Smith, Assistant Professor of Agricultural Engineering	$ 2,000
R. K. Baker, Assistant Professor of Poultry Husbandry	2,000
A. E. Hennings, Assistant Professor of Physics	2,000
A. M. Shaw, Assistant Professor of Animal Husbandry	2,600
G. G. Cutler, Second Professor of Field Husbandry	1,000
S. J. Basterfield, Assistant Chemist	600
T. Thorwaldsen, Assistant Professor of Chemistry	1,800
W. J. H. Tisdale, Assistant Professor of Animal Husbandry	1,800
J. Cameron, Assistant in Field Husbandry	1,000
H. Henrie, Assistant in Field Husbandry	1,000
H. Saville, Assistant in Field Husbandry	1,000
K. G. MacKay, Assistant Professor of Dairying	2,200
Miss Abbie DeLury, Director of Homemakers' Clubs	1,600

In addition to the above, $9,200 is set aside for permanent extension lecturers and other appointments are in contemplation as rapidly as suitable men become available. The following is the financial report:—

Receipts, February 28, 1913	$	15,000 00
" May 1, 1914		27,148 15
	$	42,148 15
Expenditures to March 31, 1914	$	14,415 22
" September 30, 1914.		13,401 32
	$	27,816 54

The following is the list of permanent officials attached to the Provincial Department of Agriculture, appointed under the Act, and whose salaries and expenses are provided through the federal grant:—

W. W. Thomson, B.S.A., Director of Co-operative Organization	$ 1,600
P. F. Bredt, B.S.A., Field Instructor in Live Stock	1,600
J. W. Hunter, Field Instructor in Live Stock	1,200
E. W. Brett, Field Instructor in Live Stock	1,200
J. E. Sirrett, B.S.A., Field Instructor in Crops	1,200
A. J. McPhail, Field Instructor in Crops	1,200
W. A. McCorkell, Field Instructor in Dairying	1,400
J. A. McDonald, Field Instructor in Dairying	1,500

Public Schools.

The Department of Education has adopted plans for an extension of the work of teaching agriculture and domestic science in the public schools. The appointment of a director of agricultural teaching will be announced shortly. Instruction to teachers in training at the two Normal schools will be given and the work of school gardens extended. These have been under the direct supervision of Mr. A. H. Ball, Deputy Minister of Education, who reports as follows:—

"Throughout the province, this year, there were over 370 school gardens in actual operation, and many other schools have made preparation to begin the work of school gardening next year; a large number of pupils also operated home garden plots under the supervision of the teachers.

"The majority of the schools throughout the inspectorates represented in this summary featured the growing of vegetables and flowers, each pupil in many cases having his or her own plot, and several schools had one general plot as well. Among other lines of work the following may be noted: Methods of seeding grain, effect of seed of different quality sown in badly or well prepared soil, hand picked grain compared with seed in bulk, seed sown on summer-fallow land well worked compared with that sown on stubble or new breaking, experiments with alfalfa and in growing of maples from seed. As a result of these various lines of work the school work is materially influenced and a better tone observed. Some teachers reported that they found this a means of awakening idle pupils, and that they encouraged school garden work among their pupils, for its educational effect and to enlist their sympathy for school life. The progress of the work is shown in the fact that over 2,600 pupils took part in the care of the plots and that in some cases planting and germination records were kept by each pupil. In one large garden there were over 200 varieties of grains, vegetables, and small fruits under observation by the pupils, while in another, where gophers were exceedingly troublesome, window boxes were introduced.

"Apart from arousing the enthusiasm of the pupils and in the deepening of interest in agricultural matters, the garden work has been brought into a very close relationship with the regular class work. In a great many of the schools the gardens furnished the necessary material for practical lessons in nature study, agriculture, and horticulture, compositions based on observations and garden talks were assigned; leaves, plants and flowers furnished subjects from drawing; systematic records were kept by pupils, and competitions, results and methods considered. A very practical example of the enterprise of the teacher and pupils of one school is shown where vegetables from the school garden were sold and pictures for the decoration of the school walls purchased with the money thus obtained."

Miss F. A. Twiss has recently been appointed Director of Household Science to organize the teaching of this subject in the schools. A portion of the 1914-15 grant will be used by the Department of Education for agriculture and household science.

The following is the statement of expenditure for agriculture by the province of provincial funds in the two years, 1912-13 and 1913-14. In the former case

the year ended February 28, 1913. A change was made, however, in the financial year and the latter statement is for fourteen months, ending April 30, 1914:—

	1912–13	1913–14
Civil Government	$ 28,620 37	$41,186 38
General agriculture	47,684 15	56,148 90
Live stock	28,603 84	68,575 84
Dairy and poultry	25,623 44	33,578 67
Publicity and statistics	27,328 20	33,413 43
Bacteriological laboratory	6,571 11	8,111 11
Weeds and game	14,228 46	18,398 07
Labour	27,194 84	55,542 00
Miscellaneous	16,023 95	27,892 19
College for agricultural extension	24,000 00	24,000 00
Total	$ 245,878 36	$366,846 59

SECTION 9.—ALBERTA.

The following is the statement of grants under the Act for 1913-14:—

No. 1. Three schools of agriculture		$ 31,500 00
Operation and maintenance	$ 18,000 00	
Equipment	9,000 00	
Buildings	4,500 00	
No. 2. Demonstration farms		8,000 00
No. 3. Dairying—instruction and competition		4,000 00
No. 4. Domestic science		2,000 00
No. 5. Miscellaneous		594 95
		$ 46,094 95

Up to the end of September, 1914, nearly all of the above had been expended along the lines agreed upon. The unexpended balances at that time were as follows:—

Equipment of schools	$ 2,959 45
Demonstration farms	231 24
Miscellaneous	467 40

No. 1.—Agricultural Schools.—$31,500.

The Department of Agriculture of Alberta had established demonstration farms at six points—Medicine Hat, Claresholm, Olds, Sedgewick, Vermilion, and Stony Plain. Those were intended "to work out in practical demonstration on a farm conducted as any first-class up-to-date farmer would conduct his own business, the results of the experiments made on the experimental farms operated by the Dominion Government in the province". The Provincial Minister, Hon. Duncan Marshall, had another object also in mind—the establishing of agricultural schools at these demonstration farms. It is the intention to have in time a College of Agriculture as a part of the Provincial University at Edmonton.

> "These schools will be carried on in connection with the farms, and in them will be given a full course in practical agriculture, as well as a complete course in domestic science. Graduation from these schools will entitle the student to a diploma in practical agriculture which will admit him to the provincial Agricultural College, to be established at a later date, where he may spend two years to complete his course and take the degree of bachelor of scientific agriculture. The demonstration farms in connection with these schools will be carried on in such a way that the student attending them will have the advantage of an experience in agriculture upon a commercial basis.
>
> "The farms will all be operated on the mixed farming principle—dairying, hog-raising, sheep-raising, poultry farming, as well as the raising of horses, and the feeding of beef cattle will be carried on at the farms. Accurate records will be kept so that not only the students but farmers throughout the province can get first-hand information as to actual results along different lines of agriculture in the province. These farms will naturally become live-stock centres, and the breeding of good live stock will be carried on at each farm, so that young stock of different breeds

and of pure breeding can be offered for sale to farmers at reasonable prices. The keeping of good live stock on these farms will also stimulate the live-stock industry in that locality, and in this way very materially assist the development of agriculture in the province.

"The object of this whole system is primarily to bring agricultural education as near as possible to the men on the land. These schools of agriculture, located as they are in different parts of the province, offer an inducement at the very door of the farmer to give his boy some training in scientific agriculture. They supply the link between the man on the land and the larger central agricultural college in the province.

"From these schools, short courses in agriculture will be carried on. All the extension work in agricultural education will centre around these schools. The institute meetings, the short course schools, the seed fairs, and the weed inspection can be effectively operated from these schools as centres, and the teachers in charge can also do very effective work during the summer months as district representatives, giving assistance to the farmers throughout the districts."

The providing of funds for education, demonstration, and instruction by the Dominion Government opened the way to these schools. In visiting the provincial department, under your instructions, an understanding was arrived at that if the Provincial Government would erect the buildings, the federal grant would provide funds for the equipment of the schools and their maintenance. The result was that three schools were erected in 1912-13, at Olds, Vermilion, and Claresholm, and preparations made for the starting of instruction in the fall of 1913. An Act respecting Schools of Agriculture was passed by the legislature which provided for a Board of Agricultural Education to be composed of nine members, three of whom must be graduates of an Agricultural College:

"Clause 15.—The board, together with the minister, shall prepare the scheme of practical and scientific work to be done by students attending each and every school, shall prescribe the course of study, appoint examiners, and in addition be an advisory board to aid the minister in all agricultural educational work."

MEMBERS.

Henry Marshall Tory, D.Sc., LL. D., F.R.S.C., Chairman.
John Gunion Rutherford, V.S., C.M.G., Vice-chairman.
James Murray, B.S.A., Calgary; Ernest Lamont Richardson, B.S.A., Calgary; John Hector McArthur, Milnerton; John Climie Drewry, Cowley; Bryce Wright De Winton; Frederick West, Vermilion; Daniel Webster Warner, Edmonton.

Courses were provided and conducted as follows: The agricultural course from 28th October, 1913 to 28th March, 1914; and domestic science courses at Claresholm 28th October to 23rd December, 1913; at Olds, 6th Jan. to 28th February, 1914; and at Vermilion, 3rd March to 30th April, 1914. Each school has a principal and instructors in animal husbandry, field husbandry, farm mechanics, household science, and English and elementary science. The permanent officials of the provincial department assist in such subjects as dairying, poultry, and veterinary practice.

The following are the departmental reports on the work of these three schools for 1913-14:—

"CLARESHOLM.

"The total enrolment of boys in agriculture was seventy-one, ranging in age from 14 to 25 years. A few dropped out for one reason or another, but fifty-eight wrote on their final examinations, and fifty passed them successfully. The great majority of the boys have signified their intentions of returning for a second year. The farmers of the community are appreciating in no uncertain way the aid given them with their live stock, and especially with their big outfits of farm machinery, where the services of the instructor in farm mechanics has been of signal importance. As at Olds, the students are anxious to conduct experiments on their own account and a series of co-operative ones have been started under the supervision of the teachers. The two months' course in household science had an attendance of thirty-five very much delighted young women. The outlook now is that at least fifty will be present for the full term course next fall. In agriculture, there will be at least forty in the second year, and a new class of about sixty. Much depends on this year's crop; if it is a good one, the school will be taxed to its capacity. The farmers familiar with the work undertaken at the school speak of it in the highest terms.

"OLDS.

"The attendance at the Olds School of Agriculture was characterized by the fact that practically every boy came directly from the farm, and the great majority of them intend to return to the land. The total enrolment was sixty-one boys, and of these forty-five wrote on their final examinations. The early spring weather of March caused quite a few to return home for seeding. Over forty of the students have signified their intention to return for a second year. The short course in household science was attended by thirty-nine young women, and it looks as though there would be a capacity attendance next fall, so interested are they in the work. A total attendance of from one hundred to one hundred and twenty-five boys may be expected for the fall. The closing of the school was signalized by a social gathering at which scholarships (presented by P. Burns, the well-known packer at Calgary), were given for the best practical work in stock judging, grain judging, weed seed identification, carpentry, and blacksmithing Robert Sinclair, of Innisfail, won first place and thirty dollars in gold, and Thomas Sigurdson, of Burnt Lake, second with twenty dollars in gold.

"VERMILION.

"The school at Vermilion closed its first course in agriculture on March 28. For this course thirty-four boys enrolled, twenty-seven wrote on final examinations, and twenty-four passed. The two months' course in household science enrolled twenty-eight young women, and closed April 30. This course will have no bearing on the entrance of students to the regular two-year course to be opened next fall. There is a feeling of genuine satisfaction over the result of the first year in the school of agriculture; the students are well pleased, and all who have had an opportunity to judge are confident that the right sort of school has been opened

for the boys and girls who return to the farm. Some of the boys will go further than next year's course, but most of them will be content with the associate diploma."

The total attendance was 268—166 boys and 102 girls. The "boys" range in age from 16 to 30 years. The following were the members of the staff of these three schools provided for out of the federal grants:—

CLARESHOLM.

W. J. Stephens, B.A., B.S.A., principal and instructor in field husbandry..	$	2,700
P. M. Abel, B.S.A., instructor in animal husbandry.....		1,800
O. S. Longman, B.S.A., instructor in farm mechanics.....		1,200
J. C. Hooper, M.A., instructor in English and elementary science.....		1,500
Miss A. Coverdale, stenographer.....		780
John Dougan, janitor.....		780

OLDS.

W. J. Elliott, B.S.A., principal and instructor in animal husbandry.....	$	2,700
F. S. Grisdale, B.S.A., instructor in field husbandry.....		2,000
G. R. Holeton, instructor in farm mechanics.....		1,800
Jas. Fowler, M.A., B. Sc., instructor in English and elementary science....		1,200
Miss E. Murray, stenographer.....		900
Theo. Moe, janitor.....		780

VERMILION.

E. A. Howes, B.S.A., principal and instructor in field husbandry.....	$	2,700
J. G. Taggart, B.S.A., instructor in animal husbandry.....		1,800
E. S. Hopkins, B.S.A., instructor in English and elementary science.....		1,800
Lawson Shanks, B.S.A., instructor in farm mechanics.....		1,200
Miss D. Thompson, stenographer.....		720
Wm. Bryden, janitor.....		720

When not engaged in school work, these instructors are carrying on extension work as district representatives. Instructors in household science have been appointed for all these schools and the courses extended.

The great success of these three schools will doubtless result in the erection of other schools, as funds become available for the purpose, and the federal grant increases in size. Further information will be found in *The Agricultural Gazette* for May, 1914, and in the descriptive calendars of the schools.

No. 2—Demonstration Farms—$8,000.

In 1914, a seventh demonstration farm was started at Athabaska Landing, north of Edmonton, to demonstrate mixed farming in a large territory opened by the northern branch of the Canadian Northern Railway. The above grant was used to put this farm in shape and to equip it. All but $231.24 had been expended up to September 30. Wm. Murray, B.S.A., is the superintendent of this farm.

No. 3—Dairying, Instruction and Competition—$4,000.

Mr. Sidney G. Carlyle was appointed to take charge of this work. He lectures at the Schools of Agriculture and at Farmers' Institutes. He also supervises the dairy herds at the demonstration farms, and had charge of the dairy competition at Vermilion. The competition was for the largest production of milk and butter fat for a period of seven months.

The salary of Mr. Carlyle, $3,000, and the expenses of his office are provided out of the federal grant.

No. 4—Domestic Science—$2,000.

Two instructors in domestic science were appointed in 1913, Miss M. M Goldie and Miss Nan Lawson. They are now attached to the schools at Olds

and Claresholm, and G. G. Stiven, who supervises the Women's Institute work in the Province, has charge of the domestic science work at Vermilion. The salaries and expenses of these three instructors account for the appropriation of $2,000 in domestic science.

The following is a list of the permanent appointees under the Agricultural Instruction Act:—

Instructor in dairying	1
Instructors in agricultural schools	12
Stenographers	3
Instructors in domestic science	2
Janitors	3
Total	21

The following is the statement of expenditures of provincial funds for agricultural purposes:—

	1912.	1913.
Civil government	$ 29,521 21	$ 30,329 30
Agricultural societies	54,460 44	69,860 01
Exhibitions, grants, judges	21,849 40	22,922 65
Live stock institutes	16,750 40	17,233 00
Live stock inspection	2,319 30	3,825 59
Live stock associations	3,300 00	3,600 00
Poultry industry	5,778 84	8,972 65
Spring stock show	1,500 00	2,500 00
Live stock commissioner's office	4,884 17	6,991 82
Demonstration farms, administration	35,911 07	73,620 58
Noxious weeds	22,574 09	28,013 46
Prairie fires	3,601 88	3,509 15
Destruction of wolves	2,141 30	2,984 75
Protection of game	14,042 17	19,164 51
Dairying	7,979 33	9,591 53
Pure seed grain and fairs	3,186 89	4,043 25
Branding	4,324 29	5,654 22
Statistics	5,905 85	11,596 53
Various associations	2,200 00	3,200 00
Agr. students - scholarships	2,075 85	3,605 95
Museum and library	1,388 36	391 06
Laboratory	8,358 86	7,705 00
Miscellaneous	1,775 38	965 69
Total	$ 255,809 08	$ 339,284 50
Capital expenditure	$ 119,933 93	$ 45,998 06
Immigration and colonization	21,183 28	16,784 02
Dry farming congress	10,000 00	...

The following is taken from the speech of the Hon. Duncan Marshall, Minister of Agriculture for Alberta, in the legislature in October, 1913:—

> "Before I go further, Mr Speaker, let me pay a well-deserved compliment to the Dominion Department of Agriculture and to the Hon. Martin Burrell, Minister of Agriculture for the Dominion of Canada. Mr. Burrell, since assuming that office, has taken the broadest possible view of agriculture and the necessity for its development in every province in Canada, and his treatment of the Provincial Departments of Agriculture has been generous and fair, and, so far as my department is concerned, I can say that in his dealings with us he has had only one object in view—that of serving the best interests of agriculture in Canada. Arrangements, I believe, are to be made this fall for a conference of Provincial Ministers of Agriculture at Ottawa, where a number of matters affecting both the Dominion and the provincial departments will be discussed, and from which I have no doubt we can part having a better understanding as to the particular scope of the work intended to be undertaken by the provinces and the Dominion."

SECTION 10. BRITISH COLUMBIA.

Under the Agricultural Aid Act, British Columbia, in 1912, received $27,334.76, which was apportioned as follows:—

Importing pure-bred stock	$11,000.00
Demonstration farm work	10,000.00
Demonstration train	4,000.00
Fruit packing, schools and competitions	1,000.00
Women's Institutes	1,000.00
Miscellaneous	334.76
	$27,334.76

The following is the apportionment of the 1913–14 grant:—

	Grants.	Expenditures.
	$	$
1. Women's Institutes	2,500.00	2,498.30
2. Farmers' Institutes	5,000.00	4,992.37
3. Demonstrations in crops and poultry	7,500.00	7,383.82
4. Demonstrations in dairying	5,000.00	4,989.42
5. Demonstrations in horticulture	5,000.00	4,993.75
6. Cow-testing	2,500.00	2,499.34
7. Instructors in agriculture	7,500.00	7,499.25
8. School gardens	1,000.00	999.65
9. Demonstrations in field work	2,500.00	2,500.00
10. Live stock judging	1,000.00	990.60
11. Fruit packing schools	1,000.00	410.00
12. Bulletins	2,500.00	2,231.15
13. Miscellaneous	4,334.76	4,333.35
	47,334.76	

No. 1.—Women's Institutes —$2,500.

Mr. W. E. Scott, Deputy Minister of Agriculture, is Superintendent of Institutes, and Mr. W. J. Bonavia is Secretary. There was, in 1913, an Advisory Board composed of four ladies, Mrs. W. V. Davies, of Chilliwack; Mrs. R. L. Lipsett, of Summerland; Mrs. J. F. Kilby, of Nelson; and Mrs. A. T. Watt, of William Head. The above grant of $2,500 was set aside for the holding of short courses, which were begun in October, 1913. These lasted two weeks each, and covered the following subjects:—

> "Dressmaking by chart system; dressmaking; cooking, theory and practice. The services of competent ladies were secured to carry on this work, and reports so far have been most gratifying, as to the attendance and the interest shown by the members of Women's Institutes in all parts of the province.
>
> "There are thirty-five Women's Institutes in the province, incorporated under the Agricultural Associations Act, with a membership of over 2,000. All of these institutes have taken advantage of the offer of the department to conduct short courses along these lines. There

are morning, afternoon, and, in some cases, evening meetings. By having two weeks' tuition, pupils who attend all the classes can go through the whole subject thoroughly and acquire good practical knowledge. Demonstration work of this nature is infinitely more valuable than evening lectures, and is much more appreciated by institute members."

No. 2.—Farmers' Institutes.—$5,000.

This appropriation of $5,000 was used by Mr. Scott, the Superintendent, for the holding of short courses in different parts of the province.

"There are at the present time ninety-five duly incorporated Farmers' Institutes in British Columbia, with a membership of approximately 8,000. The series of short courses, consisting of demonstrations and lectures on all subjects of importance to those interested in the different phases of farming, were held under the auspices of the Live Stock and Horticultural Branches of the Department of Agriculture. The subjects taken up in horticulture were: Vegetable growing, fruit growing, pruning, topgrafting, preparation of the ground and planting, small fruit culture, cultivating, irrigation, and general orchard practice."

No. 3—Demonstrations in Crops and Poultry—$7,500.

The following is the scheme of demonstration plots as outlined by the Deputy Minister of Agriculture:—

"A considerable portion of the federal grant has been apportioned towards the establishment of experimental and demonstration farm plots, which will be worked under an agreement between the owners of the land and our department. The owner will on his own part supply the land at a nominal rent for a period of five years. The Department will do the work, and the produce from the plot will become the property of the owner. It is our intention to conduct experimental work, as well as demonstration work, on these plots, especially in districts in which agriculture has as yet not made much progress. The department hopes to be able to show the farmers, how, by application of the underlying principles of agriculture, they can increase their crop production. If we can show by our methods how they can materially increase production from the soil, we shall immediately interest them, and they will begin to think. Show the farmer how he can put more dollars into his pocket, and you will then have made a willing convert. It is wonderful what difference a wire fence will sometimes make in crop production. On one side is a fine crop of 50 bushels of wheat and on the other a meagre one of 15 bushels, yet both have the same soil conditions, the same air, and the same sunlight. To show the farmer the reason for this difference is our object, and we hope to accomplish this by means of our demonstration plots. We shall endeavour to show them how they can move from the 15-bushel class to that of the 50, by using their brains as well as their hands

"One often hears a farmer speak of college-bred men with new-fangled notions, but if these same college men can give them successful demonstrations, they will soon compel their respect and attention. This we hope to be able to accomplish. The work will be done by the farmers themselves, under the direct supervision of our expert officials.

"It is our opinion that these farm plots will prove of even greater value than a government-owned farm. One often hears farmers say, "If we had the same funds as the Government have, we would be able to

accomplish similar results." What we want to show them is how they, without any large increase in expenditure, and with the ordinary material they have ready to hand can, by having an intelligent knowledge of the elements of plant food in the soils, methods of cultivation, and treatment for rendering these available, conservation of soil moisture, seed selection, correct methods of cultivation, etc., largely increase their crop yield.

"Arrangements have now been completed whereby twelve of these demonstration plots will be started in the province. Six will be placed in northern British Columbia, in the territory between Hazelton and Fort George. There is a great necessity for educative work in this newly settled part of the province. Settlers are coming in in ever-increasing numbers, as a result of the near completion of the Grand Trunk Pacific railway. There is an enormous extent of good agricultural land in this part of the province, and it is important that both experimental and demonstration work be done in this district, in order to set the feet of the new comers along the right path Six will be inaugurated in southern British Columbia in the older settled districts. The work will be under the direction of the Live Stock Branch of the department. The soil and crop instructor will have supervision of the work."

Mr. J. C. Ready was appointed to this position, and the following is his report on the carrying out of the work:—

"In the winter of 1913-14, six plots of land of 4 acres each were secured by the department. The plots are called Farm Management Stations, and are located at Chilliwack, Kamloops, Armstrong, Edgewood, Grand Forks, and Rock Creek. The object in each case is to co-operate with the Farmers' Institute of the district in evolving a system of cropping that will give the largest amount of crop suitable for use in the live-stock business, at the same time maintaining or increasing the soil fertility. Problems incidental to the work—such as the benefits of the use of high-class seed, deep fall ploughing, underdraining, and dry-farming methods —are approached in the light of recent practical and scientific knowledge. The land is leased by the Department of Agriculture at a stated yearly rental (the amount depending on the district), for a period of eight years, and an experienced local man is put in charge as manager. The Farmers' Institute of the district is invited to appoint a committee of their members, who compose an advisory board, and the duty of this board is to discuss the policy of the station with the representative of the department, and to represent the rancher in the outlining of the work of the station. The wishes of this board are observed as far as the finances and the provincial policy of the department will allow. The work is made intensely practical, and no methods are allowed that are not within reach of the beginner. Accurate data of the work are kept.

"The idea of the department in co-operating with the institute and consulting with the ranchers, through their representatives, as to the methods of procedure has made the work popular, and has eliminated the so-called "expert demonstration" element from the work, and substituted the co-operative idea. The weakness of the system is that the overhead charges on the small acreage are comparatively heavy, so that the tendency is to increase the acreage included in the station, and to put part of the burden of the rental on the Farmers' Institutes interested."

Eight alfalfa plots of 1 acre each were established in various parts of the province. This crop is of great promise in British Columbia, and special attention was given to preparation of the seed-bed, inoculation of the soil, and selection

of seed. Over $2,500, was expended in the distribution of high-class seed oats to farmers to demonstrate the value of superior seed, but most of this was repaid.

Mr. J. R. Terry, Chief Poultry Instructor, makes the following report:—

"Last year five poultry breeding stations were placed out in various parts of the province, and were so successful that no less than eighteen have been located this year. Twenty females (two-year-olds) and two cockerels were supplied to reliable breeders. The breeder provides shelter, care and feed, and the department supplies the breeding pen free of cost, and a premium of $25 is given to breeders selling not less than fifteen settings at not more than $1 per setting. The stations are located in the least accessible parts of the province and as far away from railway lines as possible. A station has been located at Aiyansh, in the Naas Valley, northern B.C. The fowls were taken 800 miles by steamer, and then nearly 100 miles by gasolene launch. The breeder at Aiyansh is at present paying $80 per ton for frozen wheat. Some of the breeders had orders for over forty settings before the fowls were supplied in the spring. So far, general-purpose varieties have been used, principally White Wyandottes and Buff Orpingtons. These birds are of recognized laying strains and of strict utility qualities.

"With the assistance of the federal grant, the third international egg-laying contest was held at the exhibition grounds, Victoria, Vancouver Island, British Columbia. Forty pens competed, six pullets to a pen. There were two classes, lightweight and heavyweights (twenty pens to each class). The contest was open to the world, and was the first contest (under official auspices) to start on the American continent. The present competition is the third, the first having been held in Vancouver. Pens competed from Great Britain, New Zealand, Manitoba, and from all parts of the province.

The following is the statement of expenditure up to September 30, 1914:—

Silo and barn construction	$	202 00
Demonstration plots		3,370 63
Seed Oats		2,528 07
Poultry demonstration station		1,151 63
Egg-laying contest		1,203 30
Demonstration work		445 56
Alfalfa demonstrations		145 00
		9,046 19
Refund on seed oats		1,662 37
	$	7,383 82

No. 4—Demonstration Dairy Farm Work—$5,000.

The amount so far used in connection with this grant was expended as follows:—

Dairy instructors and inspectors	$	1,326 38
Judges for dairy farm competitions		598 70
Prizes for milk and cream competitions		200 00

The department employed two qualified men, veterinary surgeons, to inspect dairy farms and advise the owners, thereby assisting in the supplying of pure milk to creameries, condensed milk factories, and city dairies. These men also assisted at stock judging competitions, short courses, and other meetings held in connection with Farmers' Institutes.

No. 5—Horticulture—$5,000.

Expenditure of grant:—

Horticultural instructors, salaries and expenses	$	1,802 10
Experimental plots and trees for schools		1,566 70
Pre-cooling of fruit investigations		1,096 20
Instructors in pruning		525 75
	$	4,990 75

Twenty-five short courses of five days each were held at Sardis, Haney, Metchosin, and North Vancouver, where practical instruction was given in the pruning of fruit trees and bushes. Three assistants to the horticultural staff were appointed.

> "Five-acre plots have been selected at Lawn Hill on Graham Island, for the Queen Charlotte Islands; at Bella Coola, to serve the valley of that name; and at Terrace to serve the Kitsumkelum-Lakelse Lake District on the Skeena River. On the Graham Island plots, special attention is being given to the amelioration of Graham Island lands by drainage, liming and fertilizers, and demonstrations in experimental work in growing agricultural and horticultural crops on such land. At Bella Coola, demonstration and experimental work with vegetables and small fruits formed the principal activity, and the plot at Terrace is being conducted on much the same lines."

The amount spent for pre-cooling was for the salary and expenses of an assistant, Mr. J. M. Creelman, who carried on investigations in the pre-cooling of fruit and its transportation.

No 6.—Cow-Testing—$2,500.

There were three cow-testing associations in British Columbia: Chilliwack, with 1,080 cows; Comox Valley, with 460 cows; and Langley-Surrey, with 420 cows. Mr H. Rive, Chief Dairy Instructor, reported on this work as follows:—

> "The salary of the tester is $75 per month. The members contribute at the rate of one dollar per cow per annum. The department guarantees the salary, and advances it in full until the association is in funds.
>
> "Quarterly reports from the secretaries, concerning the number of cows, fees, etc., are required, and quarterly report books giving in full the results obtained by the testers must be sent in to the department.
>
> "These Associations are not of sufficiently long standing for data of much value to have been compiled. All are working up towards full capacity, and lapses among the members from any cause are rare."

This grant was used in full to pay the expenses of the tester.

No. 7—Instructors in Agriculture—$7,500.

The chief item under this grant was the payment of field agents, who went from farm to farm investigating farm conditions, collecting information as to production, and advising as to lines of agricultural work. There were also instructors in horticulture, bee-keeping, and live stock.

No. 8—School Gardens—$1,000.

Of this grant, $999.65 was expended up to 19th of November, 1914.

No. 9—Demonstration Field Work—$2,500.

Under this grant came the following items: The expenses of judges in field crop competitions, demonstration farm plots, supplies for silo construction, and prizes for ploughing competitions.

No. 10—Stock-judging Competitions—$1,000.

Up to the 19th of November, 1914, $990.60 had been charged to this grant.

No. 11—Fruit-packing Competitions—$1,000.

Prize money has been paid for fruit-packing competitions and for exhibits of packed fruit by packing-school pupils.

Apple-packing contests were held at ten fairs: Vernon, Summerland, Nelson, Salmon Arm, Armstrong, Creston, Nakusp, New Denver, Cranbrook, and Trail. The object of these contests is to stimulate still further a keen interest in rapid and high-class fruit packing.

The pupils of twenty-four fruit packing schools made exhibits at eighteen different fairs; each pupil's exhibit consisted of five boxes of apples and five different packs. These exhibits were the object of special attention by the fruit judges at these fairs, because it is partly on the results of the same that the fruit-packing school diplomas are granted. Prize money provided under the Act is an additional incentive to a perfect exhibit. A total of $410 has been spent under this section.

No. 12—Bulletins—$2,700.

This covers a wide range of publications, such as bulletins for women's institutes, programmes, judging books for live stock, etc. Up to 19th of November, the expenditure was $2,231.15.

No. 13—Miscellaneous—$4,334.76.

This was used almost entirely for the payment of salaries and expenses of men employed to visit farmers, gathering information as to agricultural work and advising as to agricultural production.

The following is a list of the instructors and demonstrators appointed by the department, and provided for under the Agricultural Instruction Act:—

	Per Month.
H. M. Howitt, Asst. Horticulturist	$ 100 00
L. F. Burrows, Asst. Horticulturist	100 00
F. M. Goodman, Asst. Horticulturist	100 00
H. M. Scott, Asst. Horticulturist	100 00
E. C. Hunt, Asst. Horticulturist	100 00
J. Ferris, Silo Demonstrator	75 00
R. L. Ramsay, Agriculturist, Northern B.C.	125 00
Wm. Newton, Asst. Crop and Soil Instructor	120 00
D. H. MacKay, Veterinary Inspector	120 00
M. Sparrow, Veterinary Inspector	120 00
M. H. Ruhmany, Asst. Plant Pathologist	100 00
Mrs. M. S. Davies, Sec. Women's Insittute Board	40 00

Three of the above assistant horticulturists were employed only from April 1 to November 1, 1914, seven months. In addition, the salary of the supervisor of the egg-laying contest was paid, and part of the salary of four cow-testers. Thus it will be seen that nine permanent offices (instructors and demonstrators) have been created through the federal grant.

The following is the statement of expenditure of provincial funds for agriculture for three years:—

	To March 31, 1912	To March 31, 1913.	To March 31, 1914.
	$ cts.	$ cts.	$ cts.
1 Administration	10,043 14	30,160 87	19,340 31
2 Live stock	23,712 10	85,069 66	93,883 72
3 Dairying	2,249 61	3,062 51	2,999 55
4 Institutes, farms, crops, etc	87,667 22	101,040 71	84,886 86
5 Purchase of live stock		50,000 00	
6 Agricultural statistics		1,374 68	3,993 80
7 Travelling expenses	8,950 00	16,207 45	20,539 28
Total	180,572 92	297,853 94	261,467 56

NOTE.—No. 1, "Administration" in 1912 and 1913 included inspection of orchards and compensation for slaughtered cattle.

The above statement shows a big increase from 1912 to 1913, and then a drop in 1914. The explanation is that $50,000 was expended in 1913 for the purchase of stock for the Colony Farm, Coquitlam. This was in reality a capital expenditure. Omitting it, the statement shows an increase from year to year, and that the federal grant was not used to curtail the expenditure of provincial funds.

Mr. W. E. Scott, Deputy Minister of Agriculture, has made the following general report upon the working of the Agricultural Instruction Act:—

"Agriculture in the provinces of the Dominion has been very materially assisted by the progressive policy outlined and carried into effect by the Hon. Martin Burrell, Minister of Agriculture, whereby, under the provisions of the Agricultural Instruction Act, the provinces receive annually a sum of money to be used by the different Provincial Departments of Agriculture along the lines of education and instruction in the different phases of agriculture. This generous and just recognition of the first industry in Canada—that of agriculture—is fully appreciated by the farmers and general public in all the provinces.

"In so far as our province of British Columbia is concerned, it has enabled this department to largely extend its educative and demonstrational work amongst the tillers of the soil. Demonstration plots have been inaugurated in many districts of the province, which are proving of very great value to the farmers by demonstrating how the highest production may be secured by the adoption of correct and scientific methods of soil treatment and culture. The federal grant is also of the greatest assistance by enabling us to appoint instructors and inspectors when it is found necessary towards carrying out any line of agricultural educative work to the best advantage—appointments which would not be made out of provincial expenditure owing to there being no provision in the Estimates for that specific purpose.

"The grant has also enabled the department to undertake field crop work, which is proving most successful and encouraging the spirit of competition and friendly rivalry, thus leading to improved farming methods.

"Soil and crop investigation work, co-operative variety test work, dairy demonstration work, and general experimental work of different kinds have been also undertaken by means of this grant.

"The work is carried out by agreement between the Federal and Provincial Governments, this ensuring that the money will be spent only along the lines as laid down in the Act.

"One feature of this excellent policy of the Federal Government is the fact that by this means the sympathetic co-operation of the Federal and Provincial Departments of Agriculture is secured towards advancing the industry of agriculture and the solving of the many problems which confront the agriculturist in all parts of the Dominion of Canada."

SECTION 11.—VETERINARY COLLEGES.

As already stated, the $20,000 provided for veterinary colleges was available for two institutions: The Ontario Veterinary College, Toronto, and the School of Comparative Medicine and Veterinary Science of Montreal.

The grant was divided according to the number of students (British subjects) enrolled in the year previous to the payment of the grant. It was divided and paid on the 7th of April, 1914, on the basis of the enrolment of 1912-13 as follows:-

Ontario Veterinary College, 183 students	$ 15,371 91
Montreal Veterinary College, 56 students	4,628 09
	$ 20,000 00

The following is the statement of the attendance at the Ontario Veterinary College in the year 1912-13:—

Ontario	90
Saskatchewan	25
Manitoba	23
Nova Scotia	11
Alberta	9
Quebec	9
New Brunswick	3
Prince Edward Island	3
British Columbia	2
England	3
Trinidad	3
Scotland	2
Newfoundland	1
British West Indies	1
Bahamas	1
	186
United States	87
Cuba	1
	274

The statement of expenditures provided by the province for the past two years, exclusive of capital expenditure, was as follows:—

	1913-14	1912-13.
	$ cts.	$ cts.
Salaries and examinations	22,800 98	19,795 98
Feed	5,676 00	5,383 31
Light, heat, water, telephone	1,199 76	1,200 38
Horses, supplies, equipment, printing, advertising and contingencies	6,363 48	6,250 04
Scholarships	150 00	150 00
	56,589 22	32,929 74
Revenue, match fees	19,568 84	20,124 85
Net cost to province	17,020 38	12,804 89

The grant of the year ending March 31, 1914, was not paid over to the province until April 7, 1914 and therefore the expenditure up to the present time has been limited. Up to the 14th December, 1914 it had been used as follows:

Services and expenses	$ 776 86
Equipment and miscellaneous	5,573 84
	$ 6,350 70

A new college building has been under construction for the past two years, and it was not ready for occupation until the beginning of the 1914-15 term, October 1, 1914. The above item for equipment refers to expenditures made recently in fitting up this college building. When completed, this building will have cost about $250,000. Fuller details for this expenditure will have to be deferred until the next report. A history of the institution and description of the new college building appears in *The Agricultural Gazette* for December, 1914.

The college is affiliated with the University of Toronto, which provides instruction in chemistry, physiology, and botany. The college staff numbers twenty-one. The remainder of the grant of 1913-14 will be expended on further equipment, the engagement of additional instructors, and the carrying on of some important investigation work.

The attendance for the term of 1913-14, on which the second grant will be based, is as follows:—

Ontario	96
Quebec	9
Nova Scotia	13
New Brunswick	4
Prince Edward Island	3
Manitoba	27
Saskatchewan	22
Alberta	11
British Columbia	4
Other British countries	10
	199
United States	73
Other countries	4
Total	276

Dr. E. A. A. Grange is principal of the college, which is located on University Avenue, Toronto, in close proximity to the University of Toronto.

The Montreal Veterinary School, which is affiliated with the University of Laval, Montreal, has also recently moved into a new college building, and the federal funds have been used wholly for equipment. Laval University erected the building, which stands at the corner of De Montigny and St. Hubert Streets, Montreal, and provides heat and light. The fees for diplomas and degrees go to the university. The college has an assembly hall, two class-rooms, two large laboratories (chemistry and bacteriology) two small laboratories for professors, a museum, a library, a small room for experimental purposes, offices for the director and treasurer, a board room, and janitor's quarters. The practical surgical work and clinics are conducted in a leased building. The college needs a new building of its own for this purpose, and it is hoped that the provincial government will provide it with this hospital. As the province of Ontario has made provision for its college, it would seem to be desirable that the province of Quebec should help the Montreal college to secure adequate accommodation.

The following is the financial statement of the college for the year 1913-14:

Receipts.

Cash on hand		$ 49 58
Fees		1,945 00
Provincial grant		3,500 00
Federal grant, 1912–13		3,000 00
Federal grant, 1913–14		4,628 09
Medical Association		122 50
Sales to medical faculty		272 00
Examinations		66 00
Diplomas		491 75
Incomplete contract		520 80
Borrowed		2,000 00
Miscellaneous		3 50
		$ 16,599 22

Expenditure.

Administration		$ 2,188 86
Salaries		3,900 00
Rent of hospital		800 00
Diplomas		330 75
Medical association		122 50
New Building—		
Apparatus	$ 978 19	
Furniture	1,888 98	
Carpenter's contract	2,486 00	
Plumbing	2,900 00	
Painting	427 00	
Electric light	403 50	9,083 67
On hand		173 44
		$ 16,599 22
Still owing on plumbing	$ 532 00	

Thus it will be seen that the extra cost of the fitting up and equipment of the new building will amount to $9,615.67. Towards this the college has received from the federal grants as follows:—

1912–13, Agricultural Aid Act	$ 3,000 00
1913–14, Agricultural Instruction Act	4,628 09
	$ 7,628 09

Approximately $2,000 of the 1914-15 grant will be needed to complete the payments. If, through the Provincial Government, or otherwise, funds can be secured to provide the college with the hospital so much needed, the federal grant after this year will be available, at least the larger portion of it, for adding to the instructors on the staff. With the universities of Belgium closed, and many of her teachers refugees it would seem to be a good time for the Montreal School to secure one or two high-class instructors to add to the staff.

Dr. E. P. Lachapelle is president; Dr. F. T. Daubigny is director, and Dr. A. Dauth is treasurer. A sketch of this college will be found in *The Agricultural Gazette* for December, 1914.

In the earlier part of this report reference was made to the importance of the veterinary colleges in supplying well-equipped men for federal service. Recently, there has occurred a new and unexpected demand for expert veterinarians for Imperial service. The call has come overseas for trained practitioners for "the front." Canada needs two veterinary colleges as well manned and as well equipped as any on this continent, and there is no reason why we should not rival those of Europe, some of which have become so famous. Our responsibility in this matter is becoming more and more realized, and we appeal to our Governments, Dominion and Provincial, to meet this fairly and adequately.

SECTION 12.—PERMANENT INSTRUCTORS AND CAPITAL EXPENDITURE.

PERMANENT INSTRUCTORS—NEW WORK.

The following is a statement of the permanent instructors, professors, supervisors, directors, and demonstrators who have been appointed by the various provinces and who have been provided for through the Agricultural Instruction Act. The list does not contain those whose salaries are paid in part out of the federal grant, nor does it include the large number of temporary assistants:—

	No.
Prince Edward Island—	
Professor of agriculture.	
Instructor in live stock.	
District representative.	
Supervisor of Women's Institutes.	
Assistant supervisor of Women's Institutes	5
Nova Scotia	
Director of rural education.	
Principal of rural science school.	
Assistant dairy instructor.	
Two assitant entomologists.	
Three farming demonstrators.	
Superintendent of Women's Institutes	9
New Brunswick—	
Director of horticulture.	
Two assistants to director of horticulture.	
Instructor of live stock.	
Instructor in soils and bee-keeping.	
Poultry superintendent.	
Three instructors in dairying.	
Provincial entomologist.	
Supervisor of Women's Institutes.	
Director of agricultural schools.	
Director of elementary agricultural education	13
Quebec—	
Chief of Fruit Division.	
Provincial entomologist.	
Superintendent of demonstration orchards.	
Provincial superintendent of school gardens.	
Provincial poultry superintendent.	
Assistant provincial poultry superintendent.	
Six district representatives (Departmental).	
Eight professors and instructors at Macdonald College.	
Four professors at Oka Agricultural Institute.	
Three instructors at the Agricultural School of Ste. Anne-de-la-Pocatière	27
Ontario—	
Director of co-operation and marketing.	
Field instructor in poultry.	
Field instructor in vegetable growing.	
Five assistant instructors at Agricultural College.	
Assistant in nature study.	
Twenty district representatives.	
Twenty assistant district representatives	49
Manitoba—	
Provincial apiarist.	
Assistant poultry instructor.	
Instructor in dairying to foreign settlers.	
Assistant instructor and Ruthenian interpreter.	
Assistant demonstrator in farm work.	
Creamery inspector and instructor.	
Instructor in home economics	7

The following is a statement of the permanent instructors, etc.—*Con.*

	No.
Nova Scotia—	
Thirteen professors and instructors in extension work at College of Agriculture.	
Director of co-operation.	
Three field instructors in live stock.	
Two field instructors in crops.	
Two field instructors in dairying	21
Alberta—	
Provincial instructor in dairying.	
Two instructors in domestic science.	
Twelve instructors at three agricultural schools	15
British Columbia—	
Two assistant horticulturists.	
Three instructors in crops.	
Two veterinary instructors.	
Assistant plant pathologist.	
Secretary Women's Institute Board	9
Total for all provinces	155

In addition to the above list of those engaged in instruction work, a number of permanent offices have been provided for, such as those of clerical officials who are concerned with instruction work.

The following is a statement of the expenditure of federal funds under the Agricultural Aid Act and the Agricultural Instruction Act, 1912-14, for buildings and equipment for instruction purposes:—

Prince Edward Island—		
Agricultural—		
Nova Scotia—		
Entomological building, horticultural building, and main building addition, at Agricultural College, Truro	$ 46,547 29	
Four buildings for short courses	2,428 84	48,976 13
New Brunswick—		
Equipment of Agricultural school, Woodstock	4,394 86	
Sussex Agricultural school	1,605 14	6,000 00
Quebec—		
Oka Agricultural Institute, first payment	5,000 00	
Agricultural school of Ste. Anne-de-la-Pocatière, first payment	6,000 00	
Montreal Veterinary College	7,628 09	18,628 09
Ontario—		
Agricultural—		
Field husbandry building	$ 60,976 75	
Poultry building	30,000 00	
Biological laboratory	2,497 34	
Dairy barn	3,000 00	
	$ 96,474 09	
Exhibition Buildings—		
Eastern Ontario Live Stock, Ottawa	$ 12,000 00	
Western Fair; London	10,000 00	
Western Algoma	5,000 00	
Windsor and North Essex Agricultural Society	2,500 00	
	29,500 00	$125,974 09
Alberta—		
Demonstration farm	$ 7,768 76	
Agricultural school equipment	6,040 55	
Agricultural school buildings	4,500 00	18,309 31
Total for all provinces		$ 226,910 76

REGULAR STUDENTS AT AGRICULTURAL SCHOOLS AND COLLEGES.

The following list includes only those taking the full courses. It does not include those in short courses or teachers in training:—

College or School—	No. of Students. 1914–15.	1913–14.
Agricultural College, Truro, N.S.	79	93
School of Agriculture, Ste. Anne-de-la-Pocatière, Que.	64	77
Oka Agricultural Institute, La Trappe, Que.	87	65
Macdonald College, Ste. Anne de Bellevue, Que.	208	202
Ontario Agricultural College, Guelph.	565	604
Manitoba Agricultural College, Winnipeg.	327	338
College of Agriculture, Saskatoon.	123	101
Schools of Agriculture, Alberta—		
Olds.	133	56
Vermilion.	41	35
Claresholm.	108	105
School of Veterinary Science, Montreal.	61	55
Ontario Veterinary College, Toronto.	232	276
Total.	1,963	2,007

The war has, according to reports, affected the attendance somewhat at some of the institutions, 1914-15. This is particularly the case of the Nova Scotia Agricultural College and the Ontario Veterinary College.

Payments Made to the Various Provinces under the Agricultural Instruction Act, 1913-14.

Province.	Date.	Amount.	Total
		$ cts.	$ cts.
Prince Edward Island.	July 17, 1913.	13,264 92	
	April 2, 1914	13,264 93	26,529 85
Nova Scotia	July 31, 1913.	27,144 22	
	Sept. 22, 1913	27,144 23	54,288 45
New Brunswick	July 26, 1913.	22,254 96	
	April 7, 1914	22,254 97	44,509 93
Ontario	July 3, 1913.	47,866 66	
	July 26, 1913.	50,000 00	
	Dec. 13, 1913.	97,866 66	195,733 32
Quebec	Aug. 28, 1913.	79,741 20	
	April 21, 1914.	79,741 20	159,482 40
Manitoba	Aug. 26, 1913.	25,865 02	
	Mar. 28, 1914.	25,865 03	51,730 05
Saskatchewan	Aug. 14, 1913.	27,148 14	
	May 13, 1914.	27,148 15	54,296 29
Alberta	Aug. 28, 1913.	23,047 47	
	Jan. 21, 1914.	23,047 48	46,094 95
British Columbia	Aug. 7, 1913.	23,667 38	
	June 27, 1914.	23,667 38	47,134 76

Payments Made to the Veterinary Colleges under the Agricultural Instruction Act, 1913-14.

Province.	Date.	Amount.	Total.
		$ cts.	$ cts.
Ontario	April 7, 1914.	15,371 91	15,371 91
Quebec	" 7, 1914.	4,628 09	4,628 09
			20,000 00

SECTION 13—APPENDIX.

AGRICULTURAL EDUCATION IN MANITOBA.

From *Canadian Farm*, Toronto Nov. 27, 1914.

THE PIONEERS OF THE MOVEMENT.

To the progressive and enterprising School Board of Stonewall, Man., must be given the credit for the taking of the initiative and estal lishing a course in agriculture in connection with their school. The start was a small one, and wisely so. They went slow, so that they might build well, and they accomplished their aim. The importance of the start is emphasized by the fact that they were backed by the Provincial Department of Agriculture, and that body established four more such courses of study in the fall of 1913 at the high schools of Dauphin, Roblin, Holland, and Teulon. Pupils from Stonewall wrote the previous spring and qualified for the first year finals in the Manitoba Agricultural College despite the fact that they were under the handicap of answering papers set by men they had never taken lectures from.

WHERE THE HIGH SCHOOL HELPS.

At present there are from twelve to twenty students availing themselves of the agricultural courses at these places. The type of student attending differs widely from those at the college, and would probably never entertain a desire to attend that institution, so that these schools are certainly working in a large, new and important field. The students average an age of seventeen years. Many have been away from school at least four years, and have attended their country school somewhat irregularly, reaching, mayhap, the sixth or seventh grade, and rarely having passed the entrance examination.

After once leaving school and satisfying his early boyhood desire to run a plough, many a lad has been made to take a man's place on the farm, and generally, unfairly, does a man's work. The time comes when he sternly realizes that he would be better off with a little more education—but where shall he get it? He is needed on the farm in the early spring and late fall, and in winter time he hesitates to go to the country school with boys several years his junior. He cannot, he feels, afford the money and time to go to the college, and so he grows up but partly educated, and hence stunted in his mental and vocational development. He has not enough grounding to attend an agricultural college, and besides he is needed at home to help take the place of the hired man. This young man hails the enterprise of the school board with delight in thus providing him with an opportunity to improve his education along agricultural lines.

THE NATURE OF THE COURSE.

The courses extend over the five winter months—November to March—when work is slack on the average farm. The subjects taken up are more or less identical with those studied during the first year at an agricultural college; the work, however, not being covered with such rapidity, and more attention being paid to the basic educational subjects—English and arithmetic.

In all the work the facts are deeply impressed by providing much of the material for practical work from the boy's home farm. Milk, skim-milk, buttermilk and cream, are brought from home and tested in the class-room, the

intention being to encourage and promote local milking associations, produce a better quality of milk, and a finer grade of butter. Grain is also brought in to be tested, the samples put up for competition and a friendly educative rivalry in grain production is thus stimulated. The whole class also takes trips out to the homes of the students, and profitable afternoons are spent in judging live stock. Bones are collected for veterinary work, weeds and weed seeds for botany, insects for the study of insect life, and fungi, parasites, etc., collected for lessons in farm pests.

Help from the Department.

The Department pays half the instructor's salary and supplies the school with a splendid library of agricultural books, besides much of the apparatus necessary to carry on the experimental work. When possible, the instructor devotes nearly all his time to the class in agriculture—English, arithmetic, book-keeping being the only subjects taken up by other members of the staff. In schools where the staff is small and the accommodation limited, the agricultural class takes certain subjects along with the regular classes.

During the summer, each student is required to do certain experimental work on his farm under supervision of the instructor. Thus the lessons learned in the winter are practised and doubly driven home in a practical and interesting way during the summer.

The work is as yet in the experimental stage in Manitoba, though everything points to its ultimate success as a potent factor in rural training. What would be encouraging would be to see the student pass from the public school straight into the agricultural class, there to take up the same work as is covered by the first two years at the Agricultural College, and the student admitted on certificate to the third year at the Agricultural College. This would relieve the College of much of the elementary work which at present must be a burden to it, and allow of more attention being paid to the advanced work. At the present time the field is so large and the cry for agricultural education so persistent that twice as many departments could take up the work and there would still be room for more workers. Manitoba is an agricultural province, and the farm boys must have their desire for education satisfied.

To some extent the work in agriculture, as taught in the high school, is similar to that taught in many of Manitoba's rural schools. There is, however, one great difference, and it exists between all high school and all public school agriculture. The public school course in farm science reaches, without any more effort, ten times as many boys as does the high school course. Also the environment is in a sense more real. Two values, however, are strongly in favour of the high school system. One is that the boys attending are of an age where their power to assimilate ideas is generally more acute, and the other is, that the education in agriculture is taken by their own free will, this making the subjects far more interesting than is sometimes the case when the teaching is compulsory. Each systems has its place; neither one can supplant the other, and both systems are therefore a necessity.

A TURNIP-GROWING COMPETITION.

The Farmers' Advocate, December 3, 1914.

A Suggestion for Public-Spirited Canadians.

An interesting contest has just been brought to a close in Nova Scotia, being a turnip-growing competition for farmers' boys. It may seem that turnips are rather an odd crop in which to put on a competition, but in reporting

the results one of the high agricultural authorities of that section made the statement, that "if we could get the farmers of Nova Scotia really into turnip growing and the accompanying cattle and sheep growing, we could double the wealth of the province." Turnips are a far more important crop than many seem to think; however, it is not so much a matter of crop as it is of getting farm boys interested in the work of increasing production on their own farms.

The competition was carried on in three separate counties, namely, Colchester, Pictou, and Cumberland, prizes being, first, $75; second, $50; third, $30; fourth, $20. Any boy over 15 and under 20 years of age, and whose guardian has property not to exceed $3,000 in assessment was eligible for entry, the amount of land in each case being 1 acre. The winners of the money had an option in using it, but they must use it either in the pursuit of an agricultural education, for purchasing improved live stock, underdraining or otherwise improving the farm, or in any other such manner as may be agreed upon by the committee in charge. This latter is a very good feature of the competition. Many boys capable of growing a good field of roots are not so well equipped to spend money to the best advantage. Any of the three outlets for the money which are definitely mentioned, would meet with the approval of any progressive farmer, and tend to uplift agriculture generally.

The Nova Scotia Department of Agriculture added $5 to each of the boys who cultivated fields that were almost equal to the four prize winners. This year fifteen boys entered the contest in Colchester county, five in Cumberland, and ten in Pictou. It was not a good turnip year in Nova Scotia, yet the average yield per acre on all the plots in the competition was 1,009 bushels, and the average yield on the prize winning fields was 1,229 bushels. As a comparison with these figures we may state that the Canada Year Book for 1913 gives the average yield per acre for all Canada as only a little over 503 bushels per acre, and the Provincial Crop Report gives the average yield for Nova Scotia as 604 bushels. Down in Nova Scotia they figure the value of turnips as at least 10 cents per bushel, which left the value of the produce of the average plot in this competition at $100.90 per acre, and of the best plots at $122.90 per acre, in comparison with $50.30 for all Canada, and $60.40 for all Nova Scotia.

These figures should bring home to readers the real opportunity which they face yearly of improving their plots. The highest yield of all was 1,317 bushels on an acre cultivated by Frank Crowe, of Colchester county, but he only won second prize in his county, as his turnips were a little too large, due to an excessive application of barnyard manure. The winning plot in this county, and grown by Frank Jennings, was fertilized with a moderate amount of barnyard manure, supplemented by commercial fertilizer. One of the boys cultivated his crop three times after his neighbours said he was ruining it, but this late cultivation in the dry season made the crop. The contest was a great success this year, and plans are being laid to carry it on again next year. We may say that the money for the first contest was donated by a Nova Scotian who lives in New York. *Those interested in the competition are desirous that other men wishing to do something for the public good would put forward sufficient money to carry on like competitions in other counties.* Competitions of this kind might well spread to all the provinces, and to other crops as well as roots.

NOTE.—A portion of the federal grant was used in this competition.

AGRICULTURAL INSTRUCTION IN BELGIUM.

There was published at Louvain, in 1910, a report descriptive of the work carried on through the state agronomist. It was the twenty-fifth anniversary of the work, which had been instituted in 1885. The report was entitled "L' Agriculture Belge de 1885 à 1910." This was so suggestive that the United States Department of Agriculture immediately issued a bulletin based on it, "The Results of Agricultural Extension in Belgium," prepared by Mr. Jas. Stedman. Some facts from this official publication will be worth considering.

"The area of Belgium is only 11,373 square miles, about equal to that of the states of Vermont and Delaware combined, and with a population in 1900 of 6,693,548, equal to that of six New England states—Maine, New Hampshire, Vermont, Massachusetts, Rhode Island and Connecticut."

"About *one-fifth* of the people are engaged in agriculture. Their holdings are mostly small, varying from about 1 acre to 100 and over."

Holdings.	No.
Less than 2½ acres each	544,041
2½ acres to 12 acres	190,833
25 acres to 50 acres	50,065
50 acres to 125 acres	12,951
125 acres and over	3,584

The average production per acre for cereals has increased for the whole of Belgium as follows:—

—	1880-1885.	1907-1910.	Increase.
	Bushels.	Bushels.	Bushels.
Wheat	24·54	38·55	14·01
Rye	23·86	36·69	12·73
Oats	49·79	81·48	31·69
Barley	78·25	57·57	19·32

—	1885.	1907.
	No.	No.
Horned cattle	1,382,815	1,817,687
Swine	646,375	1,379,462

Land values increased correspondingly.

In this same period the home surroundings of the farmers were also greatly improved, the quality of the live stock was much bettered, and a great industry arose in market gardening and in floriculture.

The remarkable improvement in the agriculture of this country is attributable, as has been intimated, to the measures adopted in 1885, whereby the office of extension supervisors was created by the Crown, and the oversight of agriculture in the various provinces was placed under the control of these supervisors.

The plan was to bring agricultural information right home to the farmers, and to stimulate the workers through the personal touch.

Each agronomist, or supervisor, or district representative, may have from one to four assistants to help in organization, preparing short courses of instruction, reporting to the Government, carrying on demonstration plots, and advising individual farmers. That a great manufacturing people like the Belgians, with only one-fifth engaged in agriculture, should be able nearly to feed itself is noteworthy, and the methods whereby such was accomplished are worth careful study. Careful investigators of Belgian progress have attributed it mainly to their system of district supervisors. Read "Land and Labour, Lessons from Belgium." by B. Seebohm Rowntree, Macmillan & Co., London, 1911. In 1912 the Board of Education of England printed a report on Farm and Agricultural Schools and Colleges in France, Germany, and Belgium. It was written by Prof. R. B. Greig, LL.D., at that time Professor of Agriculture in the University of Aberdeen, now member of the Board of Agriculture of Scotland. Dr. Greig had visited Belgium in 1911.

He wrote as follows:—

> "The state agronomist or itinerant agricultural instructor is generally admitted to be the chief cause of the wonderful improvement which has taken place in Belgian agriculture during the last quarter of a century. The results of his instruction can be measured in various ways, and quite definitely by the agricultural statistics which show that Belgian farms produce £10,000,000 more annually than they did twenty-five years ago, at a cost for every kind of agricultural education of not more that £40,000 a year. What is now the densest population in Europe is almost supported by the product of its own farms, which yield an average of £20 per annum per acre as compared with less than half from British land."

This is so important that we give the following extract dealing with the nature and method of work:—

> "The state agronomists, who are stationed, one or more, in every commune, met at first with some opposition and much apathy. For the first few years they delivered single lectures at any centre likely to produce an audience, but as interest increased they developed their lectures into courses, and now they base their instruction on ten groups of subjects from which a course of fifteen lectures extending over the winter months is selected."
>
> "The groups are:—
>
> 1. General conceptions of agriculture.
> 2. The rational feeding of cattle.
> 3. Zoo-technique and farm hygiene.
> 4. The rational treatment of milk, butter, and cheese.
> 5. Agricultural book-keeping and accounts.
> 6. The raising of poultry.
> 7. Rural law.
> 8. Elementary rural economy.
> 9. Co-operation and insurance.
> 10. Agricultural hydraulics.

> "A village selects a course from these groups, and the state agronomist arranges for the instruction, much of which must be supplied by specialists. As a rule, a number of farmers, chemists, managers of creameries, and accountants, who are qualified by education and experience to instruct in their own specialities, are employed for part of the course, and paid a fee for each lecture. A state agronomist may

thus have ten or fifteen colleagues under his direction and supervision. A somewhat similar procedure has been tried successfully in Canada. The lines indicated are those on which some English counties are now working, with this important difference, that, as a rule, there is no continuous course of instruction in any one village throughout the winter. The result of all this mental activity in Belgium is a rapid increase in rural prosperity, shown not only by the growth of the national agricultural income, but by the numerous co-operative societies (some of which contain 50,000 members), stock insurance associations, credit banks, and farmers' creameries."

AN EDUCATIONAL COMPETITION FOR COUNTRY GIRLS.

This also is a suggestion for public-spirited Canadians, women as well as men, and for Women's Institutes and Home-makers' Clubs. It has been planned and is being financed by Mr. R. B. Whyte, of Ottawa, Ont.

Objects:—The main objects of the scheme are:—

1. To aid in the general movement for the reconstruction of education for rural districts by providing a practical medium of instruction in elementary horticulture and agriculture in rural schools.

2. To create a new interest in Mother Earth and show what she is capable of doing if properly handled.

3. To provide instruction in the growing and canning at home of vegetables and small fruits.

4. To arouse an increased interest in the preparation of better food, especially for the winter months, all of which makes for better living and better health.

In order to encourage as many girls as possible to start a garden, and also to assist as many rural school teachers as possible to take up the teaching of elementary horticulture and agriculture in their schools, Mr. R. B. Whyte, of Ottawa volunteered to offer prizes in competition in Carleton county. The rules of this competition were as follows:—

1. Competitors must not be less than 10 or more than 18 years of age on May 1, the day that entries to the competition close.

While contestants do not need to be in attendance at school, it is expected that the majority of those entering into this competition will be at school and that all will be receiving instruction and encouragement in the work from the teachers.

2. Each competitor must operate a garden of as nearly one-twentieth acre in area as she may find it convenient. This may be square or oblong, although the latter is usually to be preferred. A plot 66 by 33 feet equals one-twentieth of an acre, and should be quite suitable.

3. Each competitor must do all the work herself after the ground is prepared for planting.

4. A record of all work done should be kept by each competitor. This may be included in the agricultural note-book, which is used at school to record the instruction given in agriculture by the teacher.

5. The plants required to be grown by each competitor are as follows:—

(*a*) Fruits: Raspberries (forty plants to be supplied free to each competitor by Mr. Whyte).

(*b*) Vegetables: Carrots, onions, beets, tomatoes, peas and beans.

In addition to the above, any competitor may grow such plants as strawberries, currants, corn, and any vegetable not mentioned.

A suggested arrangement of the above material in the garden is given in the booklet "Home Gardening and Canning," as are also the directions *re* their production.

It is the hope of the committee that each competitor will distribute to her friends in the neighbourhood as many as possible of the young raspberry plants (suckers) which appear the second and subsequent years. Competitors who report having done this will receive credit when the awards come to be made.

6. The plot of each competitor will be inspected and judged during the growing season, the score awarded at this time being taking into consideration in making the awards.

7. Each competitor is required to send an exhibit entirely of products of her own garden to the County Fair at Richmond in September.

Exhibits of citrons, melons, pumpkins, squash shall consist of one in each case; exhibits of the other vegetables (including corn) except those in jars, three in each case.

Raspberries or other small fruits (when available in competitor's garden), tomatoes, beans, and peas, (canned) 1-quart, gem jar in each case.

The prizes will be awarded on the following basis:—

(*a*) Report of inspector of growing plants.....100 points.
(*b*) Report of judge of exhibits at County Fair...100 points.
(*c*) Written report, including essay of competitor..100 points.
Total.....300 points.

Mr. L. H. Newman, Secretary of the Canadian Seed Growers' Association is secretary of the committee in charge of this work.

CONSOLIDATION FAVOURABLE TO AGRICULTURAL EDUCATION

By Prof. S. B. McCready, B.S.A., Director Elementary Agricultural Education, Toronto, Ontario.

While consolidation has made very little advance in Ontario up to the present, there are increasing signs in every part of the province that trustees, inspectors, and the public at large are awakening to the necessity and the advantages of this form of school administration. In the opinion of many, it will come most readily when the single-section scheme of administration is replaced by the township as a unit of school administration. In the meantime, public opinion has to be created in favour of change.

One of the best hopes that we have for the introducing of elementary agriculture into the one-teacher rural schools of the province is that rural communities everywhere may learn that school instruction in agriculture is possible, and that it is well worth while. That, indeed, more and better education is just as desirable and necessary on the farm as for the member of the family who will go on through the high school and possibly the college. That from this rational teaching of agriculture, through nature study and children's garden projects, a new conception of education for country life may be disseminated.

The desire for agricultural teaching will grow by what it feeds on. People who wish to see how the little instruction given in the one-teacher school has revealed life and its possibilities to their children, will desire more of this good

thing. Their demands can be met only by co-operation. School boards will be driven by public opinion to consolidate in order to give older pupils a wider instruction in agriculture, and with this, of course, domestic science and manual training.

This might possibly bring about consolidation for high-school purposes into township high schools. Such schools located in hundreds of townships of old Ontario would be able to give a great service to their communities. With special teachers on their staffs, specially qualified in agriculture and domestic science, not only would the regular public school pupils have their needs met in these subjects, but all the young people of the township as well could be brought into regular or special high-school classes. The consolidation of schools in Ontario would make for a great advancement in agricultural education.

CONSOLIDATED SCHOOLS.

By J. J. Tilley, Ex.-Inspector of Model Schools for Ontario.

The old type of rural schools with a single teacher for all grades, with meagre equipment, and with a crowded programme, cannot measure up to present-day requirements. The little one-room, one-teacher rural school, with its limited attendance, has served its day and generation and its memory should be revered. But it belongs to the past, not to the present.

There was a time which many can remember when the country school was a centre of attraction, when spelling contests between adjoining sections, literary societies and debating clubs, made it the life of the neighbourhood. It was then suited to the social needs of its generation, but owing to industrial and social changes, city immigration, and other causes, that time has passed away, never to return. The old order of things is gone, and the good old rural school with its average attendance of from forty to fifty pupils, taught by a man with a well-developed character, has given place to the small school of from five to twenty pupils in charge of a young girl who, in a majority of cases, will teach but a few years.

Many parents are not satisfied with the limited opportunities now afforded in rural schools, and are determined to provide a higher education for their children. To do this they must either send them from home or move to a town or city. The result is that a large number, perhaps the majority of those thus sent to obtain a higher education, never return to live again the farm life. If this emigration for higher education is to continue, the rural districts will be reduced in population, and will, lose much of their best blood.

It has been well said that "the country child is entitled to as good educational privileges as the city child, and this, too, without breaking up the family home." It might also be said, experience has shown that under equal advantages, he will excel his city cousin.

The question of improved education for rural children is the greatest question that can come before the farmer to-day. What is especially needed is a system of schools that educate country people as successfully as city schools educate city people—a system that trains for life without breaking up the home or taking the child away from the influence of the favourable conditions under which he was born.

Consolidated schools furnish at once the most feasible plan for accomplishing this. Country schools capable of doing it cannot be established within walking distance of each other. Transportation must be provided. The introduction of the system is sure to come. The chief concern is the kind of school that

will meet the requirements. It should be a country school for country children; it must breathe the atmosphere of country life; it must instil a love for country things, and it must teach in terms of the life which the country child understands.

CONSOLIDATION AND AGRICULTURE.

By Richard Lees, M.A., Public School Inspector, in the *Farmer's Magazine*, Toronto, December, 1914.

Consolidation has proved a great advance in rural education because:

1. It tends greatly to increase the attendance at the rural school. This is true both as to increased enrolment and a higher average for those enrolled. Take, for illustration, the case of Manitoba. In 1912, the average attendance of the consolidated schools was 73 per cent of the number enrolled, while for all the rural schools of the province it was only 55 per cent. At the new schools the average was just about equal to the total enrolment for the same districts before the change.

2. Not only is the attendance improved, but tardiness is practically eliminated. Besides, children go to school dry, comfortable, fresh, and fit for study, in all kinds of weather. The health of the pupils is better owing to freedom from wet feet, damp clothing, etc. Most of the degrading moral influences, such as vulgar and profane language, that are too common in the way to and from school, are avoided in the security of the properly controlled van.

3. The larger numbers brought together make possible the development of a community interest by cultivating a school life and spirit that are entirely lacking in the average rural school of to-day. In more than half the rural schools of Ontario, the attendance is below 20. In 500 schools there are fewer than ten pupils, and 110 have less than five. This condition makes impossible the playing of any games that require team action. In only rare cases is it possible to arrange matches with neighbouring schools. Thus one of the greatest influences of the school life is lost, and the boys and girls grow up without that sense of community action and co-operation, the lack of which is universally recognized as one of the most serious defects in the rural life of the present.

4. The consolidated school makes possible in the country all that now renders the city school superior, the grading of classes, ample equipment, such as laboratories, workshops, etc., and for teaching subjects, teachers possessing special qualifications for certain departments of work as well as greater permanency and better qualification in the teaching staff. It also makes possible the securing of teachers, as principals at least, with an interest in and a devotion to the life and activities of the country.

5. The buildings are better and of a more imposing character, thus taking hold on the imagination of the community in a way that even the best of the district schools never could. As a result, the school becomes a community centre for social and intellectual development to an extent that has never been possible under the present system. The building is, of necessity, so situated as to be within easy driving distance from all parts of the district it serves, and so can be reached without difficulty by all. The system of conveying children to school puts all on an equal footing, and does much to break down class distinctions, allay sections feuds, and promote a spirit of harmony and co-operation in communities that have been lacking in these qualities.

6. The teachers, instead of being isolated individuals, with no means of communication, no co-ordination of work, no common interest or aims, are

brought together, organized into a unit with a common purpose and aim. Some of the chief reasons why teachers leave the country and flock to the city are lack of companionship, the need of some one to refer to, consult with, and seek advice from, the sense of isolation in dreary and uninviting surroundings, and the deadening routine. In the graded consolidated school these things are largely overcome by the bringing together of a group of teachers in a suitable building with attractive surroundings. It is thus made possible to secure and retain the services of good teachers with much less difficulty than under existing conditions.

THE UNITED STATES APPROPRIATIONS FOR AGRICULTURAL INSTRUCTION.

The following is a brief statement of United States legislation providing grants to the various states for promoting agriculture:—

1862. *The Morrill Act.* This was "the first serious national effort to aid agriculture in a practical way." 30,000 acres of land for each Senator and Representative in Congress were apportioned to every state to provide a State College of Agriculture and the Mechanic Arts.

1890. *Second Morrill Act.* This appropriated $25,000 to every state yearly for the more complete endowment and support of the colleges established under the Morrill Act of 1862.

1907. *Nelson Amendment.*—This increased the amount appropriated under the 1890 Act for agricultural colleges to $50,000 a year.

Down to 1912, the appropriations under these Acts were as follows:—

Amounts paid 1890 to 1912	$28,802,000 00
Proceeds from sale of land	13,348,041 00
Value of unsold land	5,042,388 00
	$ 47,192,429 00

1887. *The Hatch Act.*—$15,000 yearly was appropriated for every state to establish an agricultural experiment station in connection with every State Agricultural College.

1906. *The Adams Act.*—This increased the annual appropriation for Experimental Stations to $30,000 a year.

The total appropriations paid under *The Hatch Act* and *The Adams Act* from 1888 to 1912 amounted to $20,716,004 15.

Agricultural colleges, 1862 to 1912	$ 47,192,429 00
State experimental stations, 1888 to 1912	20,716 004 15
Total	$ 67,908,433 15

1914. *The Smith-Lever Act.*—This is an Act providing for co-operative agricultural extension work. In 1911, 1912, and 1913 there were before Congress two Bills known as the Page Bill in the Senate and the Lever Bill in the House of Representatives, both designed to provide ways and means for taking intruction to the farmers. Finally, on May 8, 1914, the President approved of the Smith-Lever Act, whereby the Federal Government provides annual appropriations for the state Agricultural Colleges established under the Morrill Act for carrying on extension work.

Three interesting pamphlets should be read by those persons desiring further information as to the reasons for making these appropriations. In February and March, 1912, the Committee of Agriculture of the House of

Representatives heard the arguments of several State College Presidents, including a graduate of the Ontario Agricultural College, Dr. A. M. Soule, President of the Georgia State College of Agriculture. Representatives of the bankers, the National Grange, Mr. Howard H. Gross, President of the National Soil Fertility League of Chicago, and the Hon. Myron T. Herrick also appeared, strongly advocating the making of liberal appropriations. The reports of these "hearings" were published in 1912 and 1913. Then in December, 1913, the Committee of Agriculture submitted a report recommending the adoption of the Bill. This is printed in Report No. 110, House of Representatives, 63rd Congress, 2nd Session.

It took nearly three years to get this legislation through Congress, whereas The Agricultural Instruction Act was introduced January 17, 1913, and was assented to June 6, 1913.

> "The Smith-Lever Bill provides for the granting of federal funds to the land grant State Agricultural Colleges, to aid in diffusing among the people useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same.
>
> "Each college so designated shall receive as a basic fund from the Federal Government, $10,000 annualy without an additional appropriation from the state. The Act also makes provision for additional appropriations to be distributed in the proportion that the rural population of each state bears to the total population of all the states, as determined by the next preceding census. To share in these additional funds, however, the state must duplicate the additional amount granted by the Federal Government for the maintenance of the co-operative agricultural extension work provided for in the Act.
>
> "That co-operative agricultural extension work shall consist of the giving of instruction and practical demonstrations in agriculture and home economics to persons not attending or resident in said colleges in the several communities, and imparting to such persons information on said subjects through field demonstrations, publications, and otherwise; and this work shall be carried on in such manner as may be mutually agreed upon by the Secretary of Agriculture and the State Agricultural College or Colleges receiving the benefits of this Act."
>
> "The Act differs from the Agricultural Instruction Act in specifying that no appropriations under it shall be used for the purchase, erection, or repair of buildings, or the purchase or rental of land or, in college-course teaching, promoting, agricultural trains or other purposes not specified in the Act, and that not more than 5 per cent of each annual appropriation shall be applied to the printing and distribution of publications."

In the year 1914-15 each state receives $10,000, making $180,000 in all. In the year 1915-16 a total of $1,080,000 is divided, varying from $10,220 for Rhode Island to $16,893 for Pennsylvania. There is a regular increase up to 1922-23 when the maximum amount is reached, $4,580,000. In that year and in succeeding years the smallest grant is $11,497 for Rhode Island, and $262,101 for Pennsylvania. When this maximum is reached the amount to be provided by all the states will be $4,100,000.

The report of the committee says:—

> "Every student and economist agrees that the efficient work of the colleges, stations, and agricultural department must be taken out to the farmer, and the most important and pressing problem at this time is that

of finding the most effective machinery for doing this. The proposition of linking up the man on the farm with the demonstrated practices of successful agriculture must be met."

The United States Secretary of Agriculture Houston, in commenting on the Bill, said:—

"The Department of Agriculture and the different state colleges have enough agricultural information to revolutionize the agricultural industry in this country if it could be effectively transmitted to the farmer."

1914. *The Hughes Bill.*—On January 20, 1914, Congress passed an Act authorizing the President to appoint a commission of nine on Vocational Education to report on June 1; $15,000 was appropriated for the expenses of the same. On April 2, 1914, the commission met. It consisted of Senator Hoke Smith (Georgia), Senator Carroll S. Page (Vermont), Representative D. M. Hughes (Georgia), Representative S. D. Tess (Ohio), Mr. John A. Lebb, Miss Florence M. Marshall, Miss Agnes Nestor, Mr. Chas. A. Prosser and Mr. Chas. A. Winslow. Senator Smith was Chairman, and Mr. Ernest A. Wreidle was appointed secretary. Forty-five persons were engaged as a staff of assistants. On June 1 the report was referred to the Committee on Education and ordered to be printed. It is now available in two volumes of 207 and 292 pages. On the same day, June 1, Mr. Hughes introduced their Bill in the House of Representatives.

The Bill provides for co-operation with the various states in the promotion of education in agriculture and the trades and industries. It deals with work in schools below the grade of colleges, that is, for public schools, high schools, and special schools of agriculture and trade schools.

The main details are as follows:—

"*Agriculture.*—For the paying of salaries of teachers, supervisors or directors: $500,000 set aside for the year 1915-16, $750,000 for 1916-17; and so increasing by $250,000 a year until 1922-23, when the amount is raised to $2,500,000; and in 1923-24 the maximum of $3,000,000 is reached. These amounts are to be divided according to the rural population of the various states. Supplementary amounts are voted to bring the minimum of any state up to $5,000 in 1921-22 and up to $10,000 thereafter.

"The amounts so provided will vary in 1915-16 from $5,000 in the case of sixteen states up to $30,750 (Pennsylvania) and in 1923-24 from $10,000 in eight states up to $184,500. Eleven states in all in the maximum year will receive over $100,000."

A similar appropriation is provided for the salaries of teachers of trade and industrial subjects, but the amounts in this case are divided according to urban populations. In 1915-16 twenty-four states will receive $5,000 each; and the largest amount will go to New York State, $84,300. In 1923-24 the maximum will provide $10,000 for 9 states, and New York will receive $505,800.

Then there are the further sums of $500,000 in 1915-16, $700,000 in 1916-17, $900,000 in 1917-18, and $1,000,000 in 1918-19 and every year thereafter, for the training of teachers for this work in agriculture, and in trade and industry and home economics.

The above grants are conditional upon the various states providing an amount in every year equal to the amount of the federal grant. The providing of buildings and equipment is left to the states.

State boards are to be appointed to carry out the Act, and a Federal Board to co-operate with them will consist of the Postmaster General, the Secretary of the Interior, the Secretary of Agriculture, the Secretary of Commerce, and the Secretary of Labour.

This Federal Board will make investigations and studies and prepare reports for the benefit and guidance of the State Boards; $200,000 a year is set aside for this work.

The total amount provided under this Bill is, in 1916, $1,656,000, and increasing to $7,162,200 in 1924.

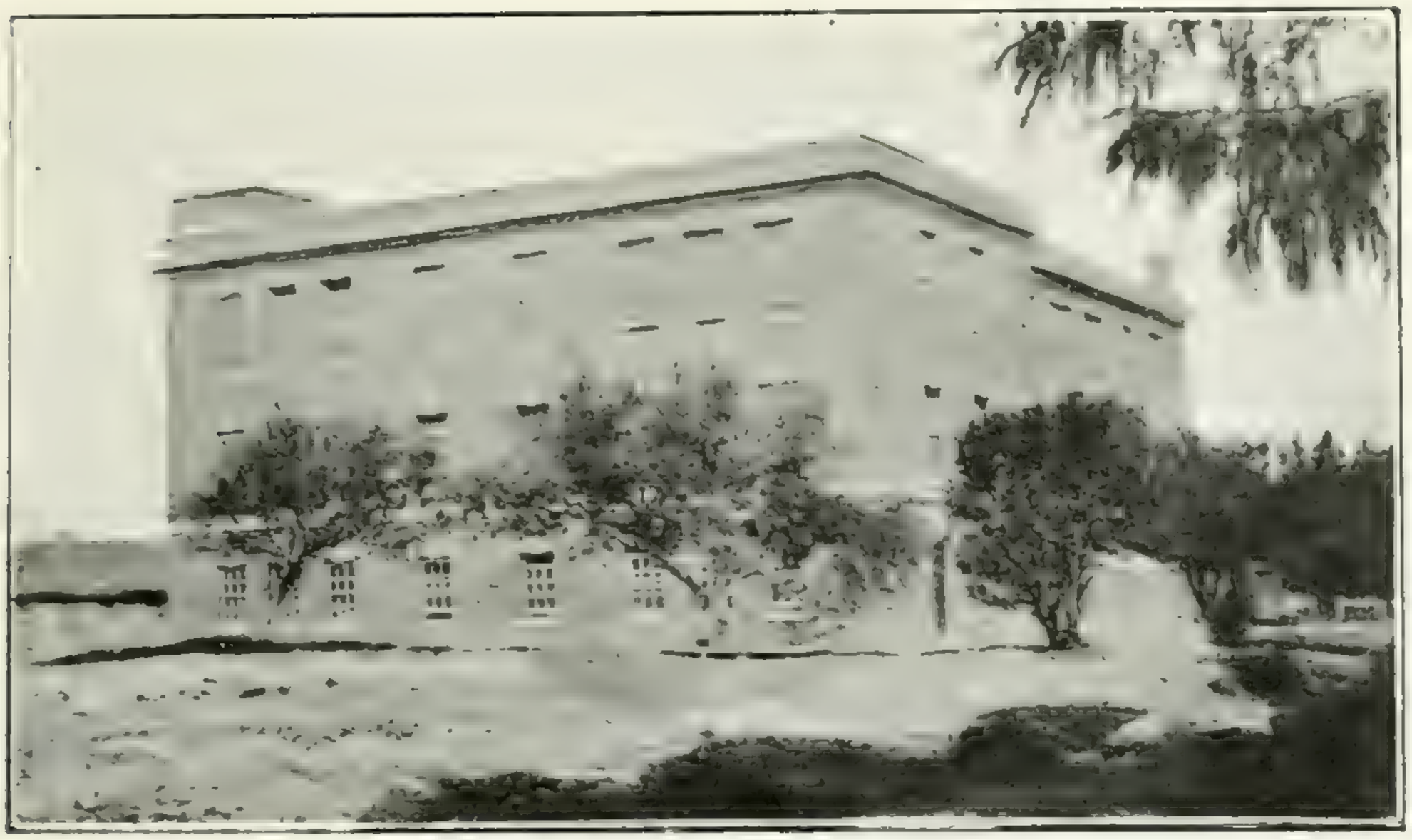
We see, therefore, that since President Lincoln signed the first Bill, in 1862, there has been an enlarging of the scope and an increase in the appropriations made by the Federal Government of the United States to the individual states to assist in agricultural instruction.

First, the Morrill Act, in 1862, to establish agricultural colleges, supplementing this by the second Morill Act of 1890, and the Nelson Act of 1907.

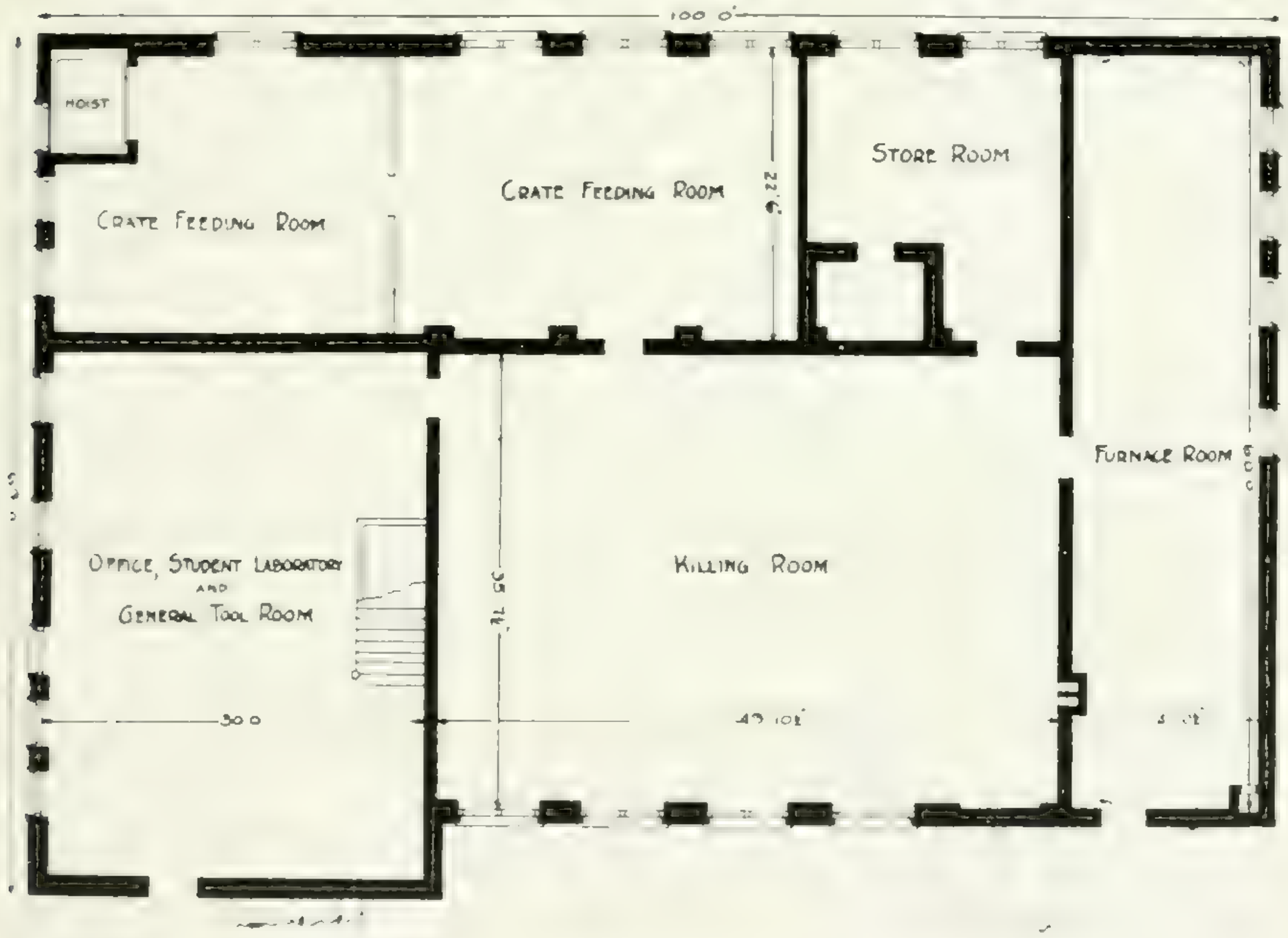
Secondly, the Hatch Act in 1887 providing for experimental stations in connection with these colleges, supplementing this by the Adams Act of 1906.

Thirdly, the Smith-Lever Act of 1914 providing for extension work through the colleges and the taking of instruction to the farmers on their farms.

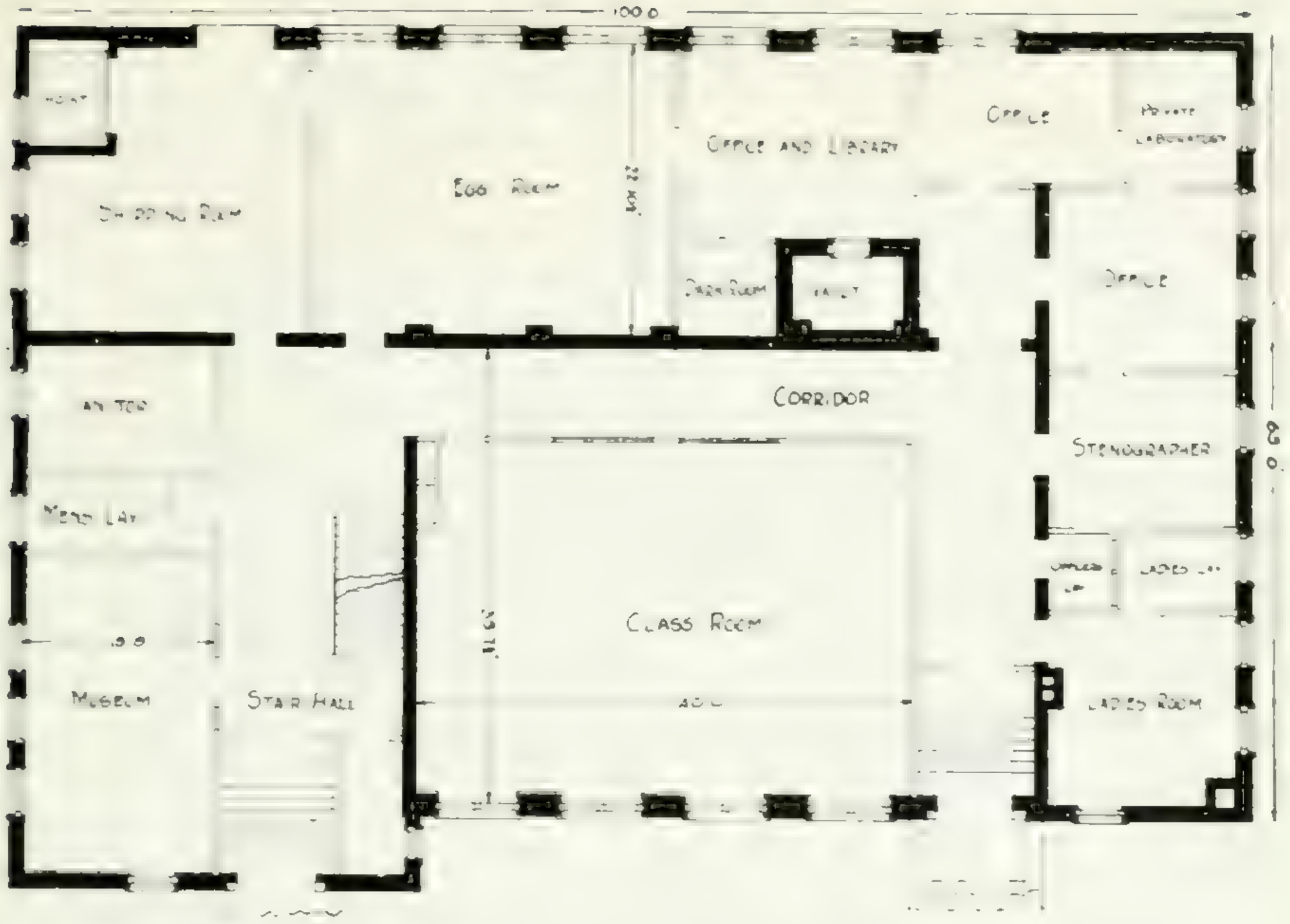
Fourthly, the Hughes Bill, now proposing to provide funds to establish agricultural schools and for the teaching of agriculture in high schools.



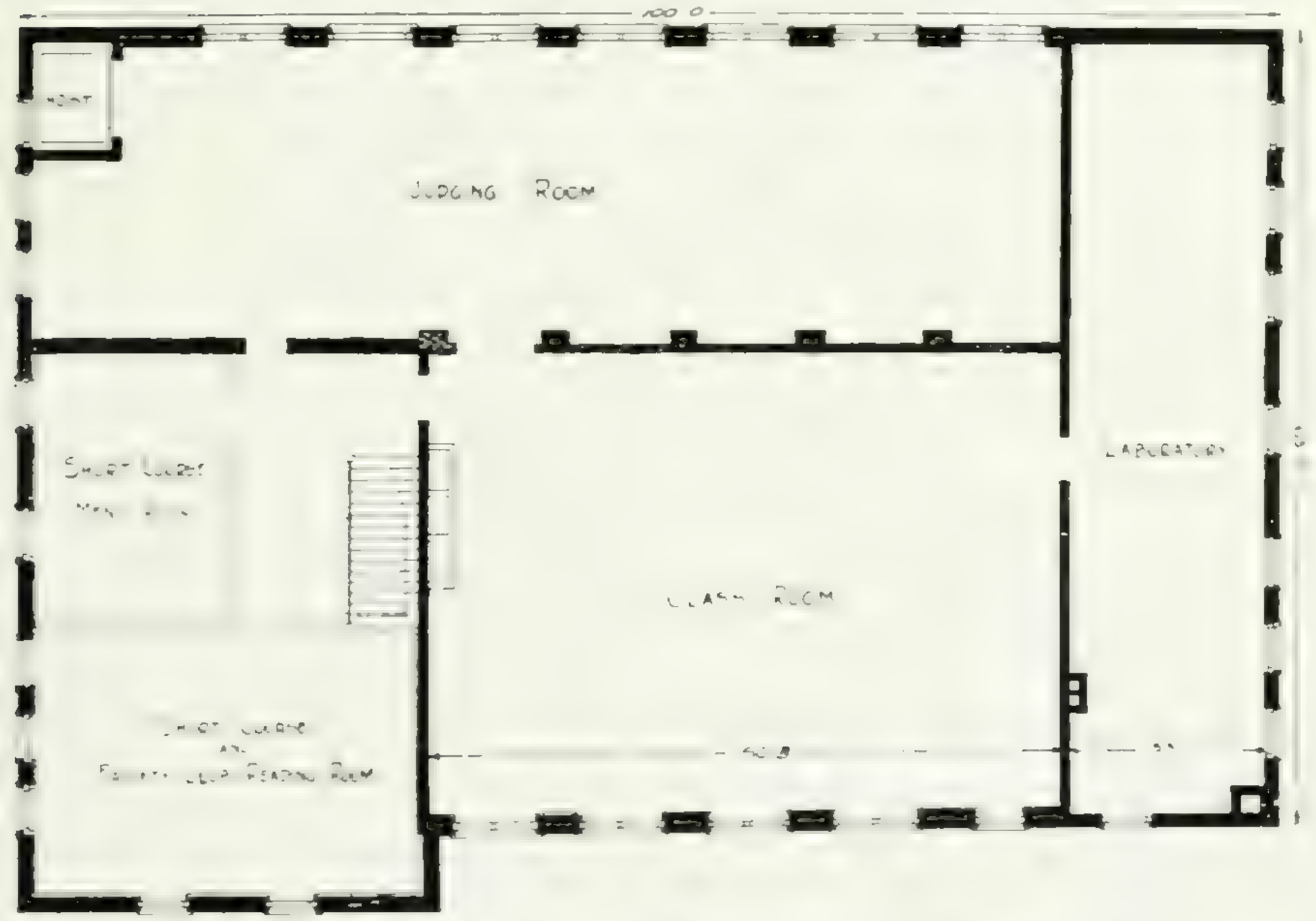
New Poultry Building, Ontario Agricultural College.



Plan of Basement, Poultry Building, Ontario Agricultural College, Guelph

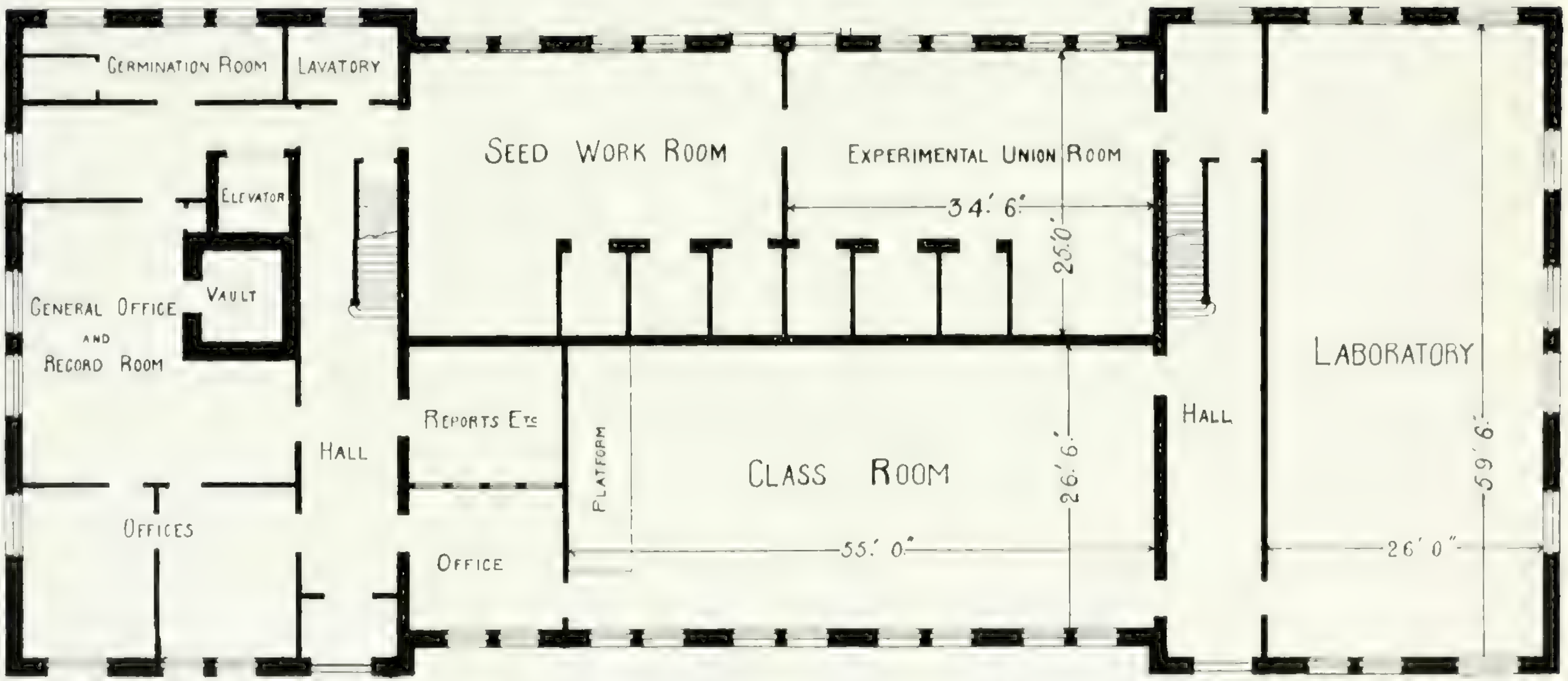


First Floor Plan, Poultry Building, Ontario Agricultural College, Guelph.

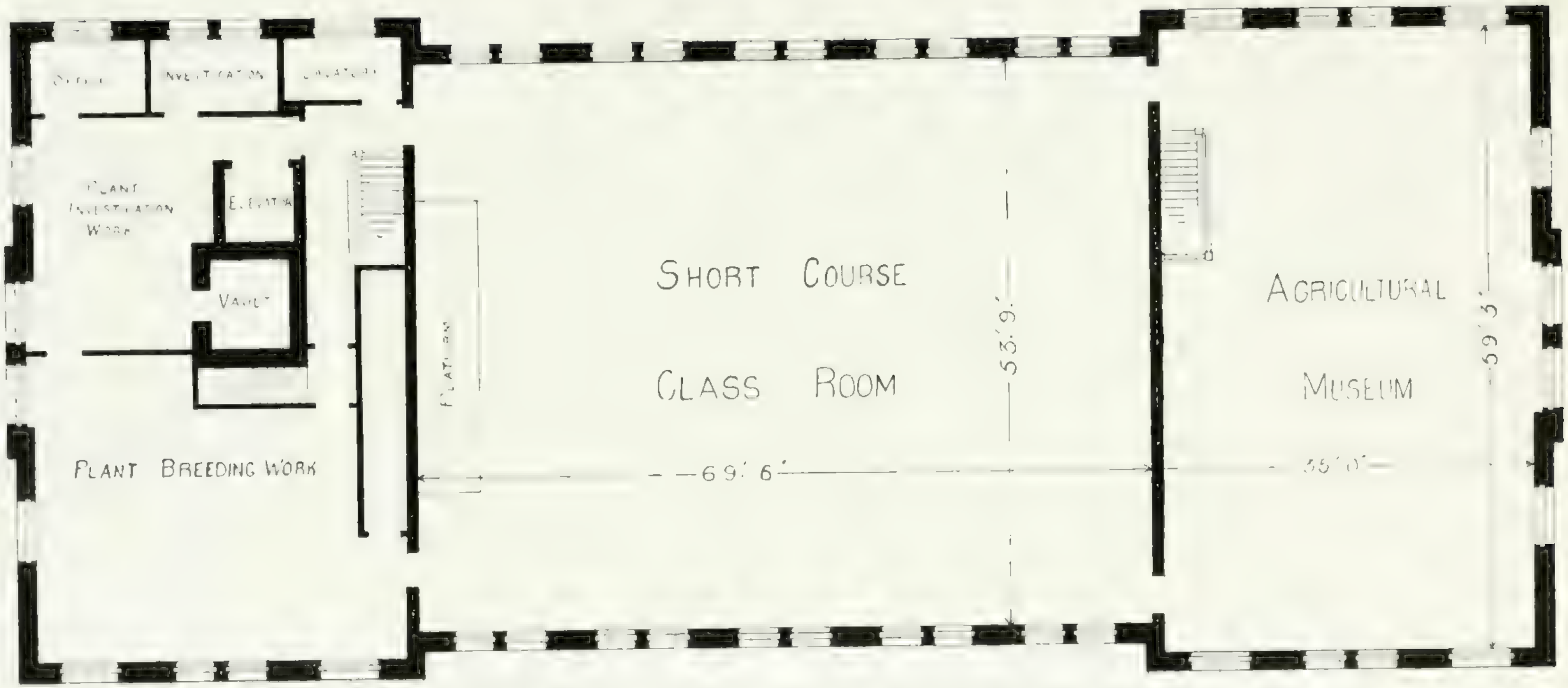


Second Floor Plan, Poultry Building, Ontario Agricultural College, Guelph.

New Field Husbandry Building at the Ontario Agricultural College



Ground Floor Plan, Field Husbandry Building, Ontario Agricultural College.



First Floor Plan, Field Husbandry Building, Ontario Agricultural College

Tablet Unveiled at the Opening of the Ontario New Field Husbandry Building.

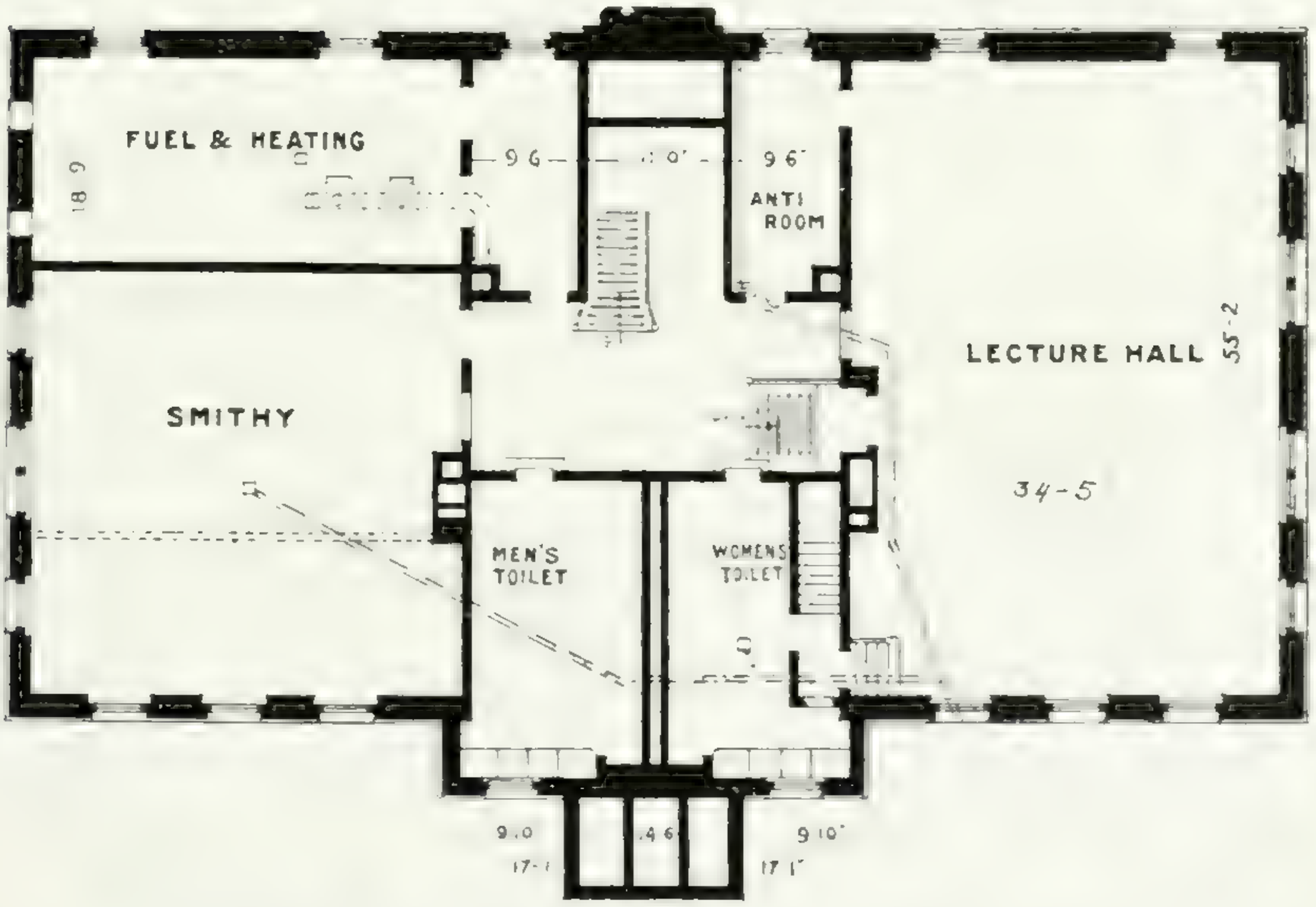
Nova Scotia Agricultural College, Main Building.

The large addition on the right was erected out of the Federal Grant.

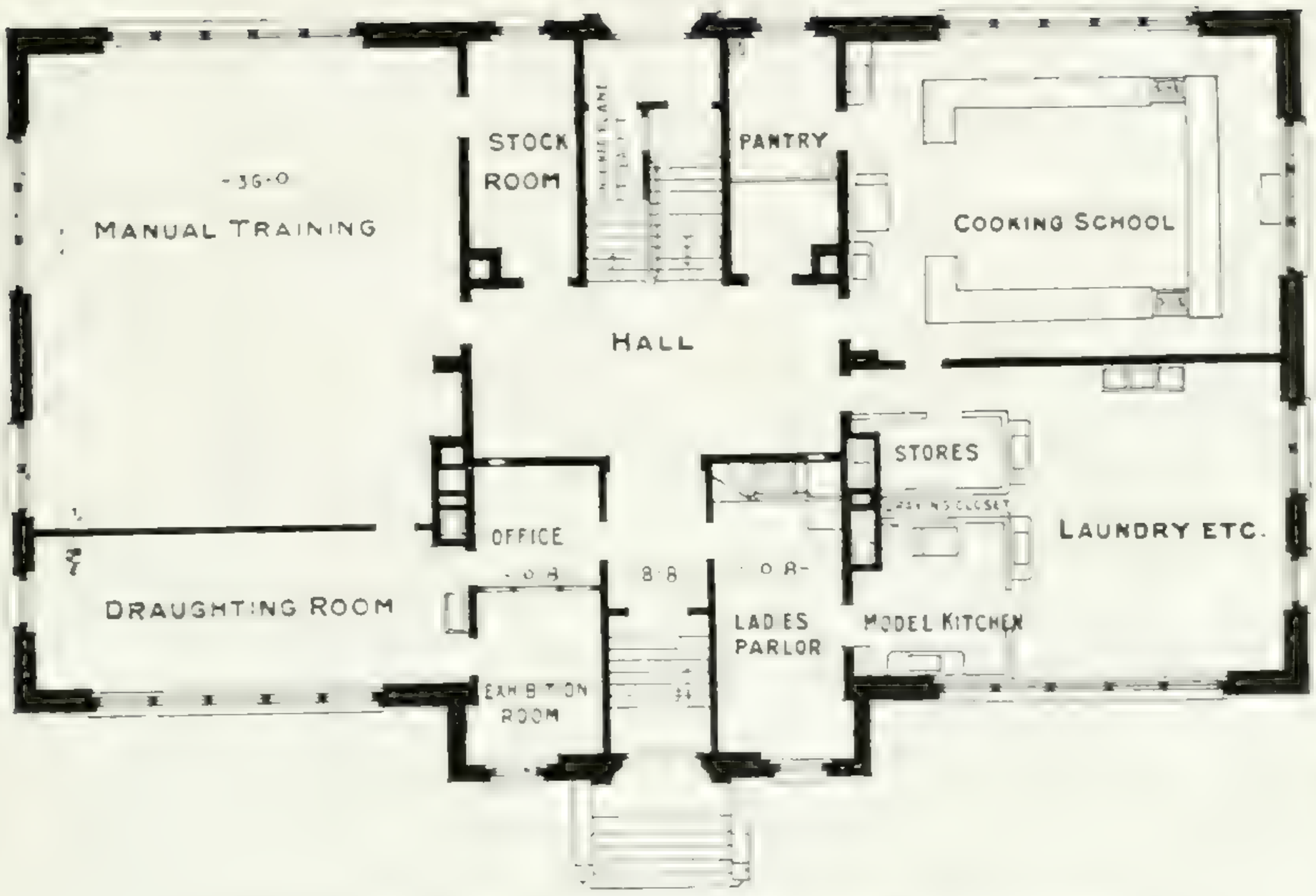
Horticultural Building and Green Houses, Nova Scotia Agricultural College.

Erected out of the Federal Grant.

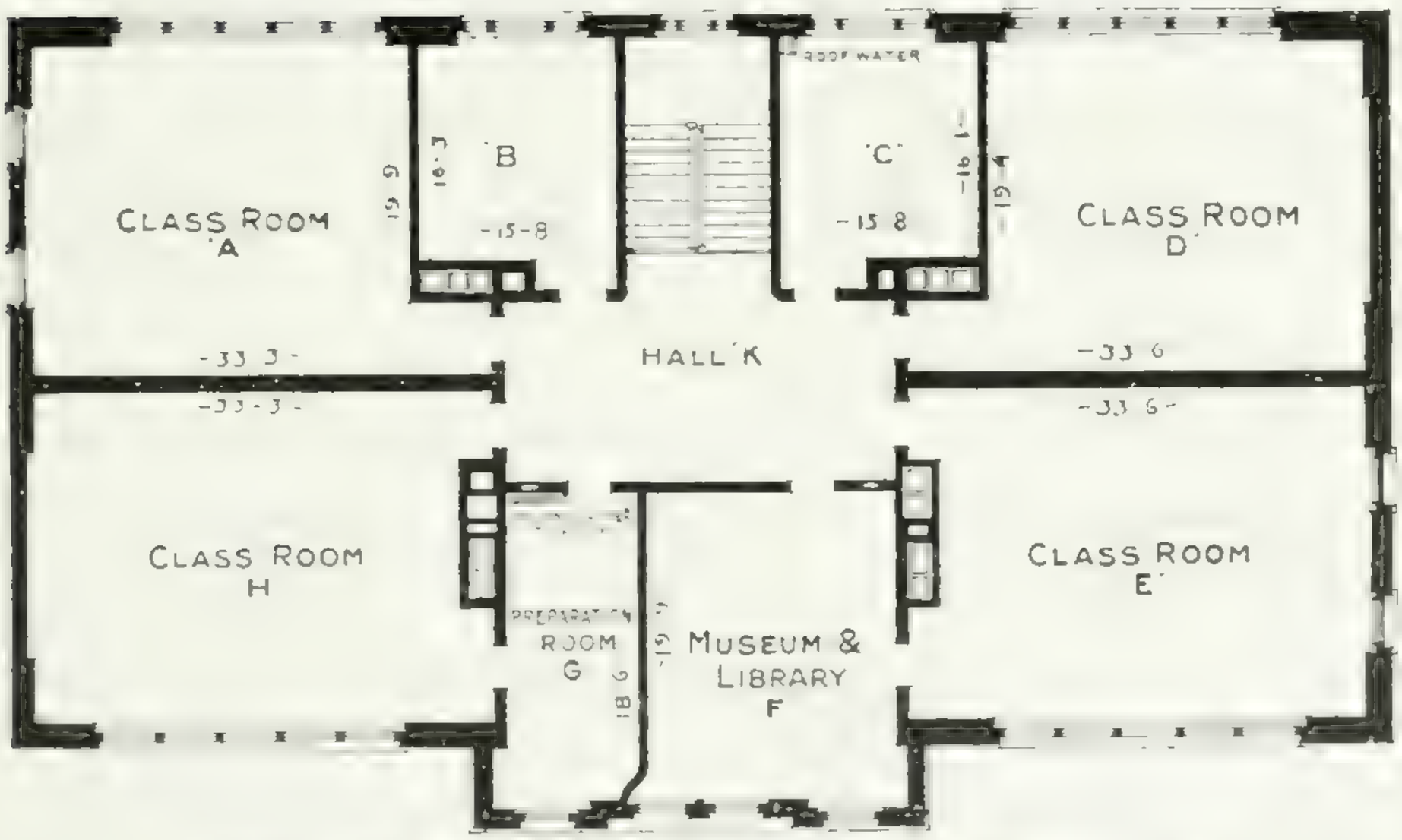
The Fisher Vocational School, Woodstock, N.B.



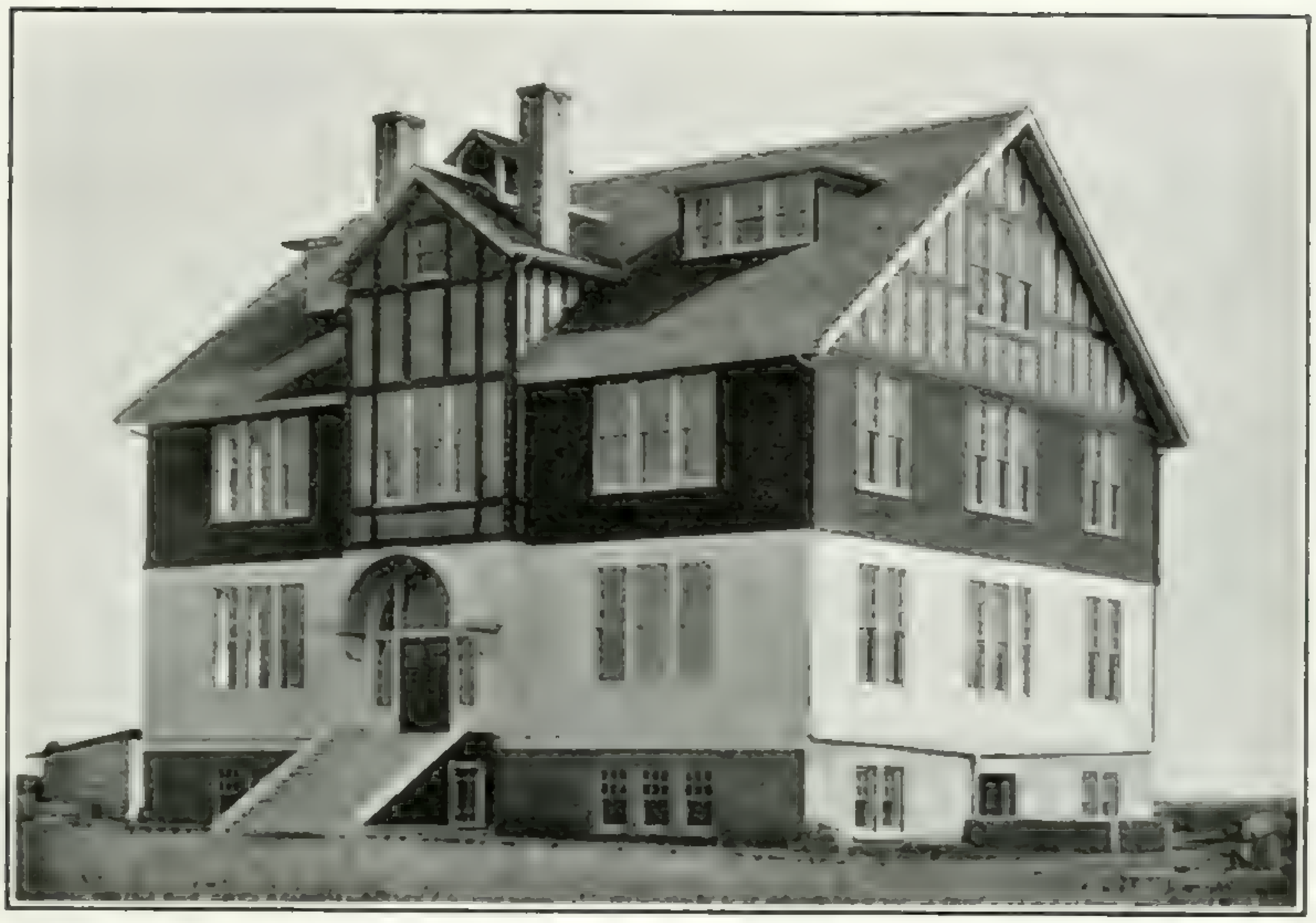
Plan of Basement, Fisher Vocational School, Woodstock, N.B.



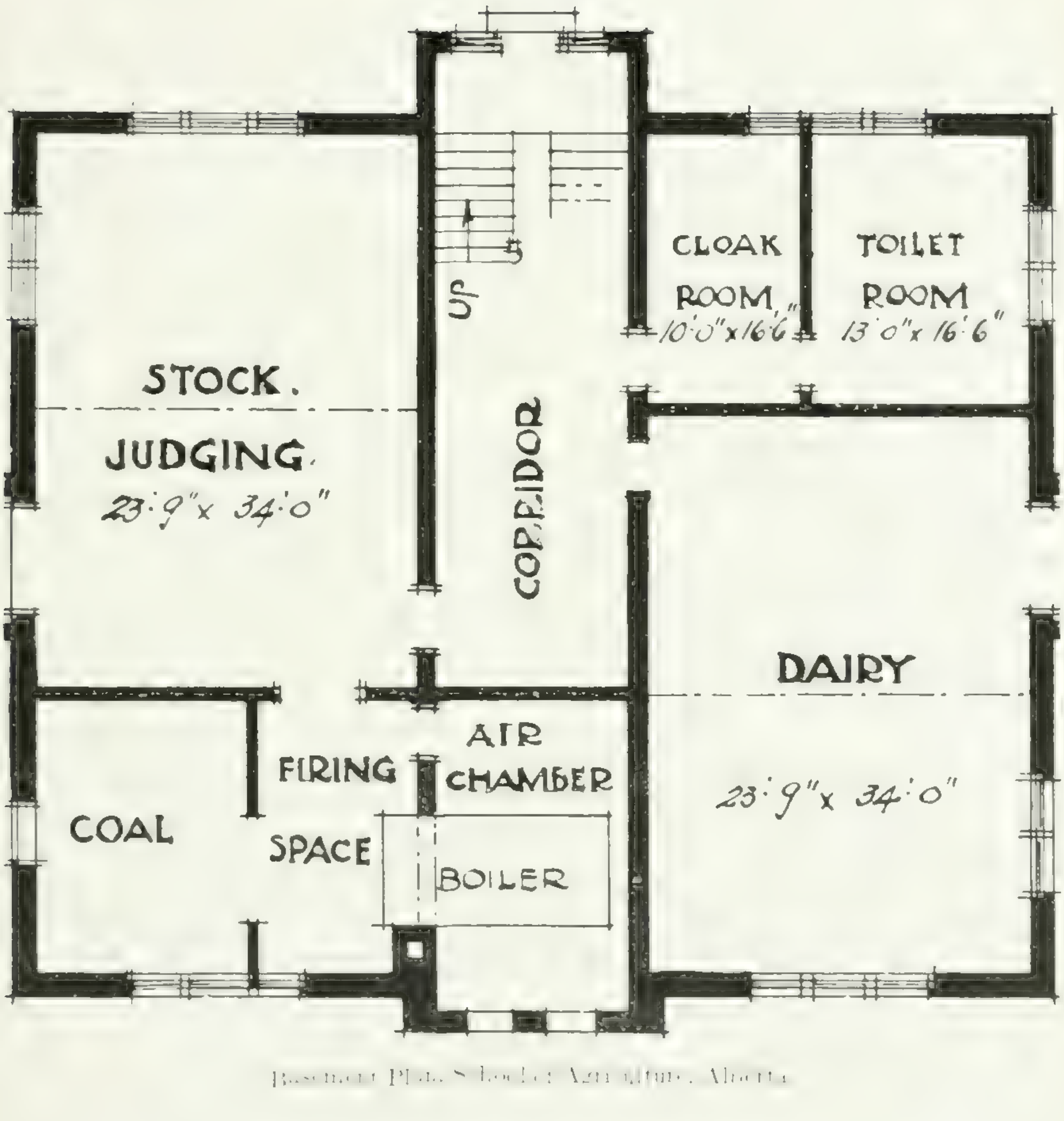
Ground Floor Plan, Fisher Vocational School, Woodstock, N B



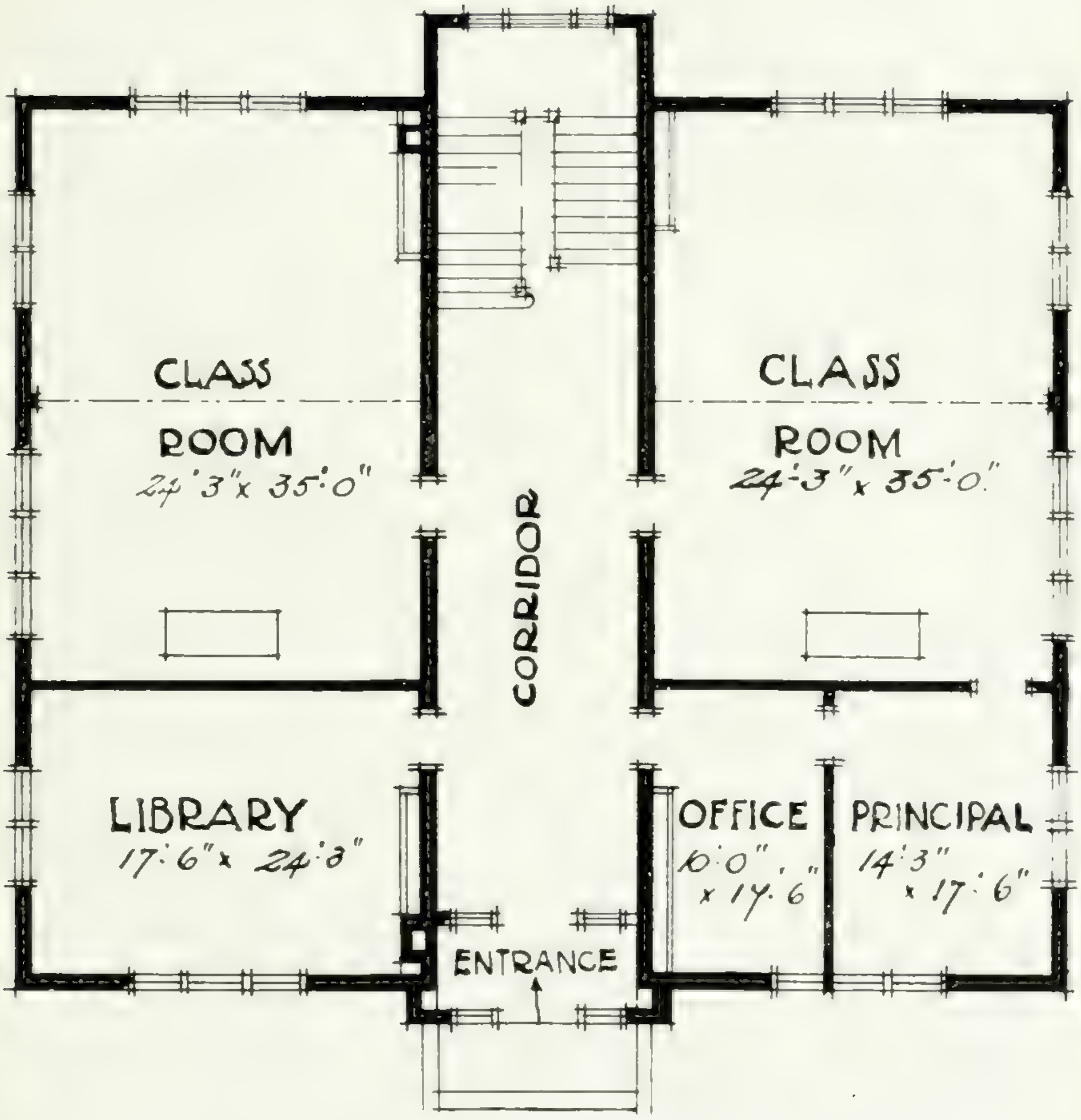
Second Floor Plan, Fisher Vocational School, Woodstock, N B



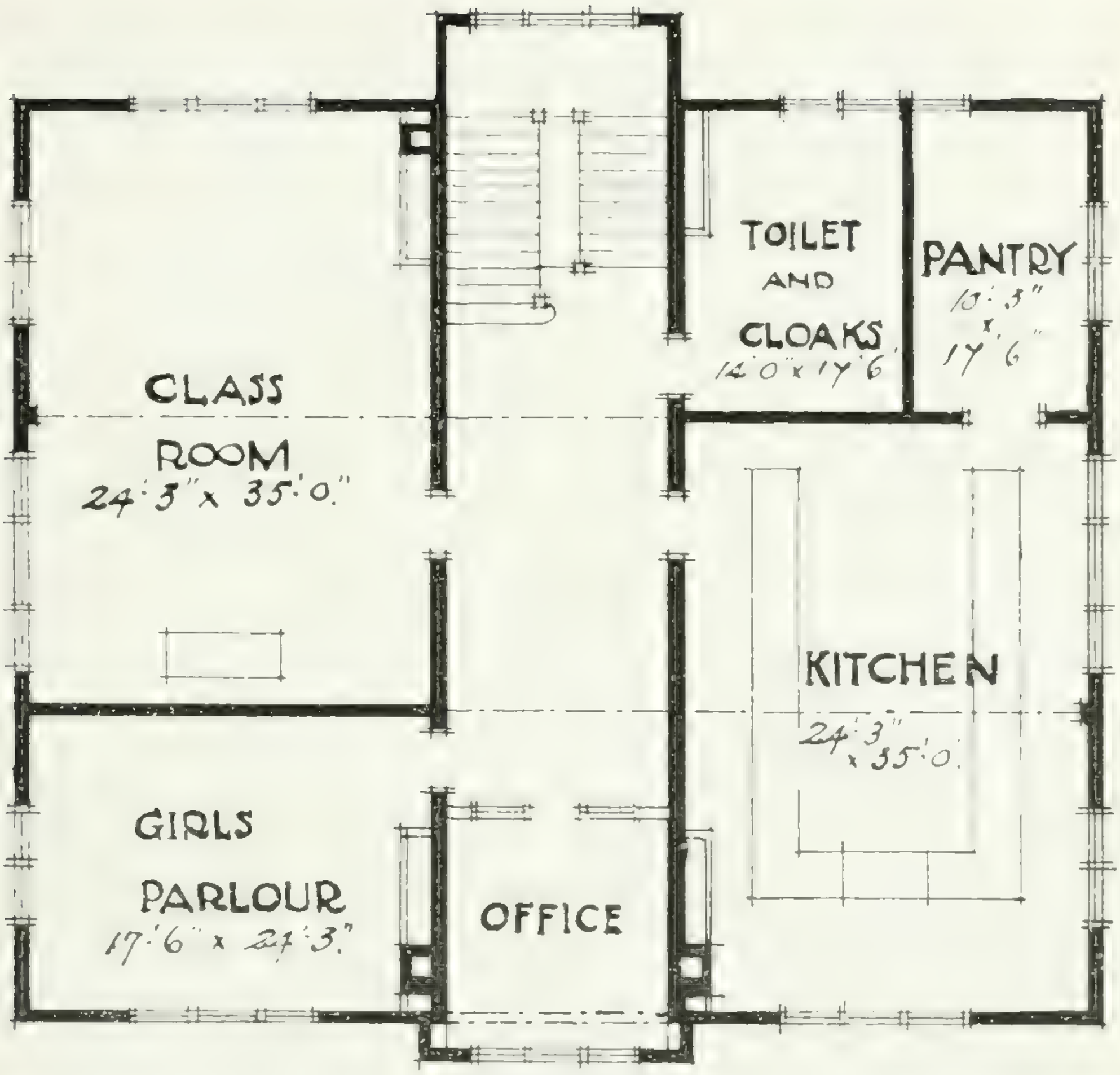
School of Agriculture in Alberta.



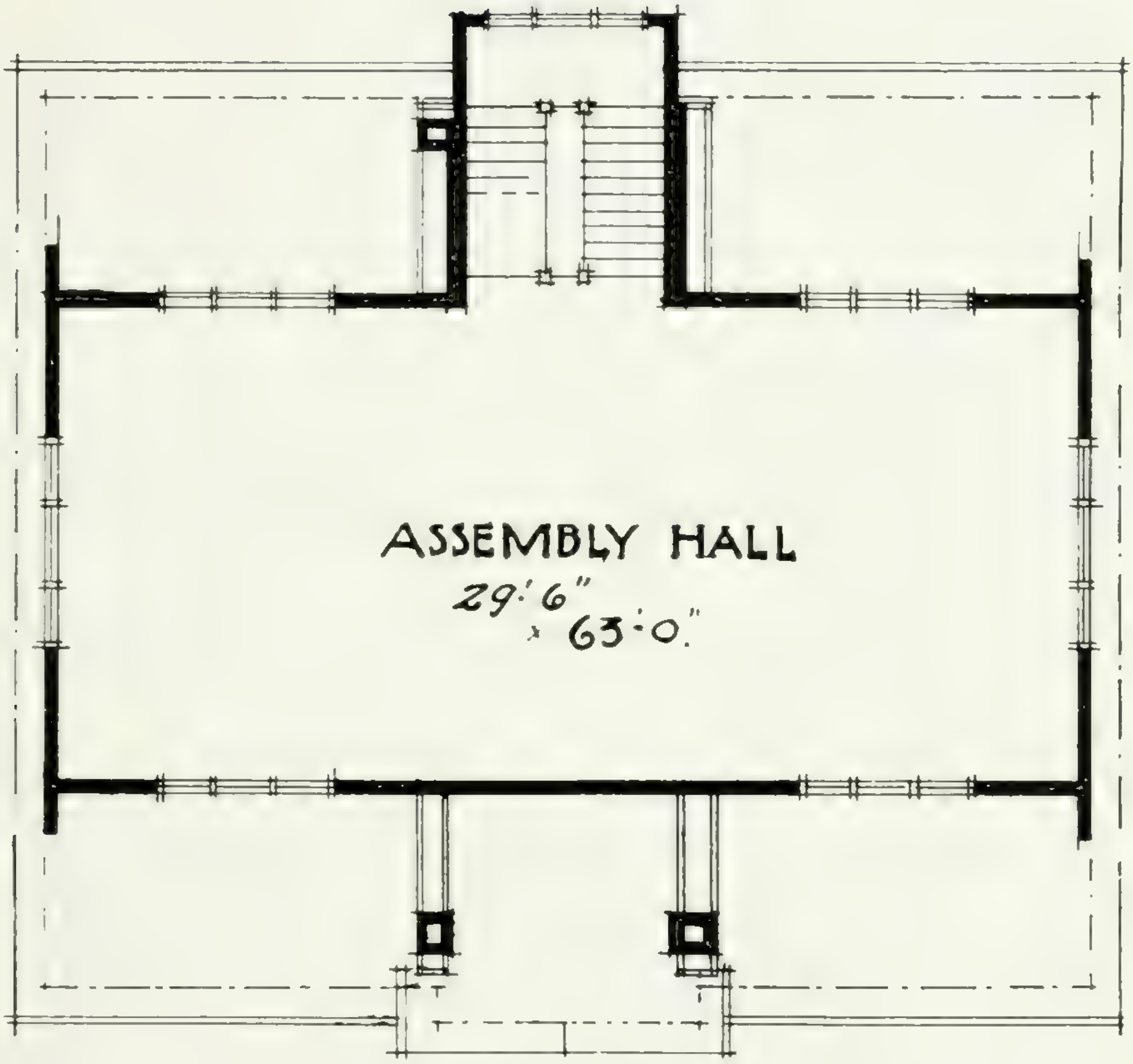
Basement Plan, School of Agriculture, Alberta



First Floor Plan, School of Agriculture, Alberta.

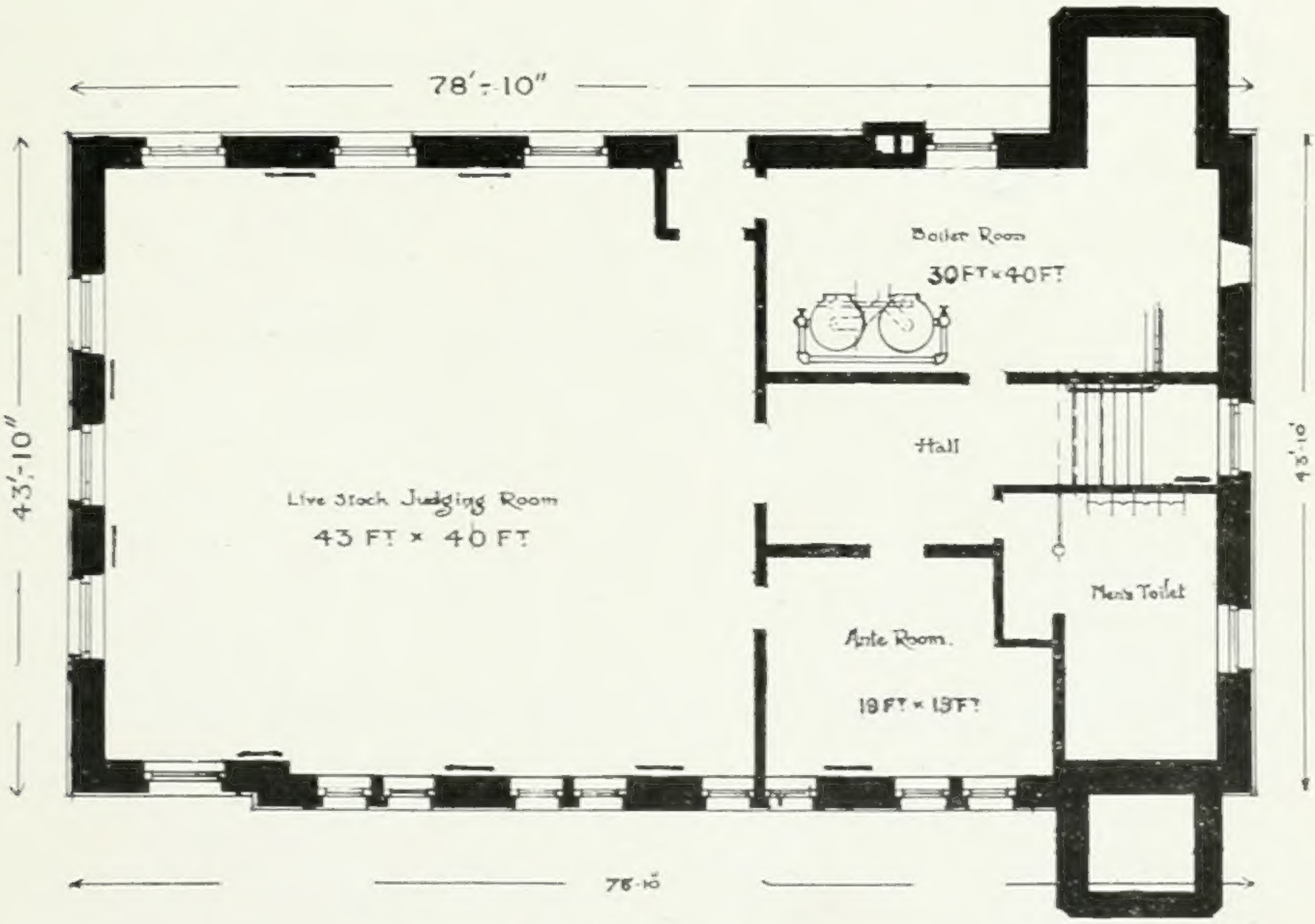


Second Floor Plan, School of Agriculture, Alberta.

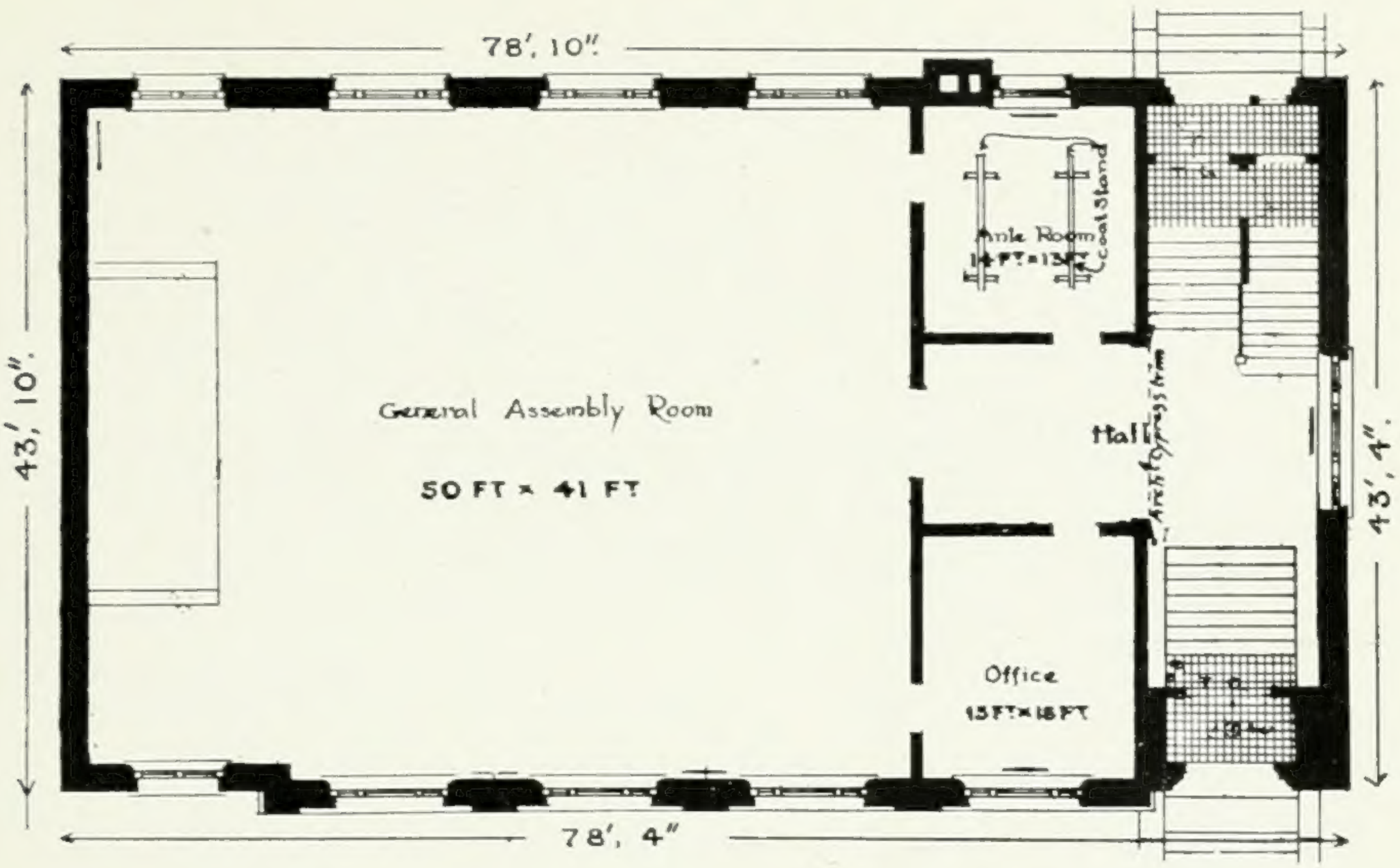


Third Floor Plan, School of Agriculture, Alberta.

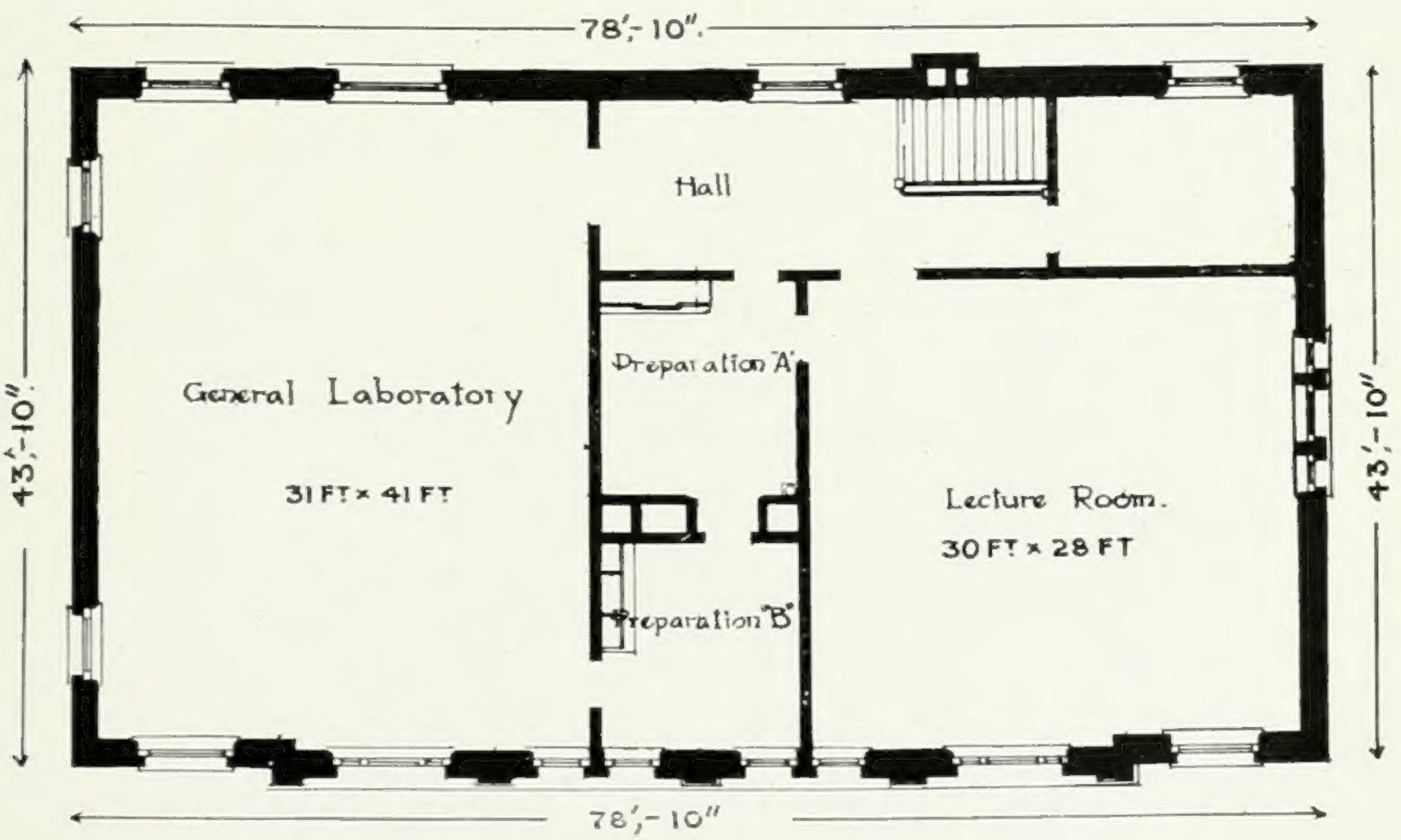
The Sussex Agricultural Institute.



The Sussex Agricultural Institute—Basement.



The Sussex Agricultural Institute—Ground floor plan.



The Sussex Agricultural Institute—Plan of second floor.